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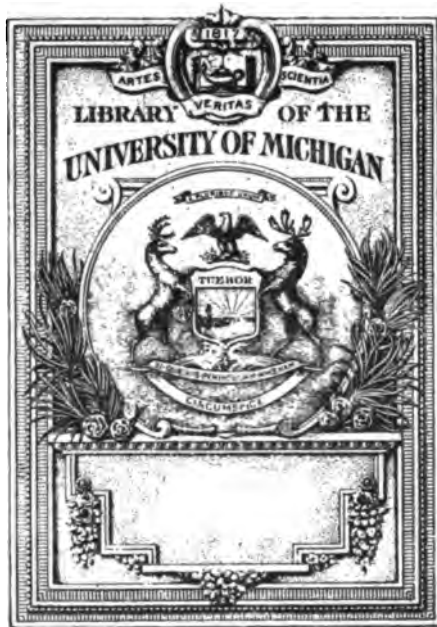
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PRESENTED BY MRS. GUY L. KIEFER
November, 1931

IN MEMORY OF
DR. HERMANN KIEFER,
REGENT 1889-1902

AND

GUY L. KIEFER, A.B. '87, A.M. '91, M.D. '91
D.P.H. (Honorary) 1911

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SIXTH BIENNIAL REPORT

OR THE

TWENTY-SEVENTH AND TWENTY-EIGHTH
ANNUAL REPORTS

OF THE

Kansas

State Board of Health

OF THE

State of Kansas,

FROM

January 1, 1911, to June 30, 1912.



STATE PRINTING OFFICE,
TOPEKA, 1912.

STATE BOARD OF HEALTH.

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GIFT
MRS. GUY L. KIEFER
4-1-32

LETTER OF TRANSMITTAL.

OFFICE OF SECRETARY OF STATE BOARD OF HEALTH,
TOPEKA, KAN., August 1, 1912.

To His Excellency, W. R. Stubbs, Governor:

SIR— In compliance with the laws of this state, I have the honor to herewith submit to you the sixth biennial report, or the twenty-seventh and twenty-eighth annual reports consolidated, of the Kansas State Board of Health for the year 1911 and to and including June 30, 1912. Very respectfully.

S. J. CRUMBINE, M. D., *Secretary.*

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Sixth Biennial Report.

The State Printing Committee having decided to make all reports covering fiscal years only, the following report covers, therefore, the time between January 1, 1911, and June 30, 1912.

The general health conditions of the state for the period of time included in this report have been fairly satisfactory, viewed from the standpoint that there were no great or general outbreaks of malignant diseases, although viewed from the standpoint of the up-to-date sanitarian, familiar with the cause and dissemination of preventable diseases, the situation is not so encouraging. In other words, there has been a great deal of sickness and a good many deaths in Kansas during this period of time, as well as during other periods of time now passed, that with our present knowledge might have been prevented.

The work of the various divisions of the department has been accomplished, with such means as the legislature provided, in a satisfactory fashion, although each succeeding year finds the work in the various divisions largely increased.

EPIDEMIC POLIOMYELITIS (INFANTILE PARALYSIS).

Following the rather severe epidemics of 1909 and 1910, there was a gradual diminution of the incidence of the disease during 1911. The work of investigation undertaken by the department to determine, if possible, the cause of the disease and the method of dissemination of the supposed infectious material has been continued, and much valuable information has been secured. The disease has been experimentally produced in monkeys at our laboratories in the School of Medicine at Rosedale, and has also been transmitted from monkey to monkey. Investigation of the incidence of the disease in domestic animals has also been undertaken, but without positive results up to the present time. This work has been under the direct supervision of Dr. A. L. Skoog of the School of Medicine of the University of Kansas.

PELLAGRA.

In 1911 eleven cases of pellagra were reported to this department, all but one of the cases occurring in the southeastern part of the state. Careful investigation of these cases revealed the fact that they were all residents of the state, there being but two instances where there was a possibility that the infection occurred outside the state. This leads to the belief that

the infectious agent, whatever it may be, is present within the borders of the state, and we have therefore undertaken investigation to determine, if possible, the nature and the source of this infectious agent.

Prof. S. J. Hunter, state entomologist of the University, has kindly consented to join with this department in such investigation, and an attempt is being made to determine whether or not the so-called Sanbon theory is true; that is to say, whether or not the disease is transmitted through the bite of what is called a "sand fly." Accordingly, a careful survey has been made of the section of country in which these patients are found, to determine the presence of the sand fly, and in every instance thus far examined the sand fly was found in near-by streams. The question then resolves itself as to whether or not the sand fly is the active agent in the transmission of the disease. Experimental work was carried on last year and is being continued this year with monkeys, in an effort to determine the truth or falsity of the Sanbon theory, and the department expresses the hope that sufficient funds may be given us by the legislature to carry on these experiments to completion.

EPIDEMIC CEREBROSPINAL MENINGITIS.

During the winter of 1911-'12 an unusually large number of cases of epidemic cerebrospinal meningitis occurred in this state, most of them in Kansas City, Kan., though the disease could be said to be epidemic in the two Kansas Citys. About 300 cases occurred within the state during the winter, with a mortality of about 65 per cent. The policy of the department of furnishing antimeningitis serum for the treatment of indigent cases proved to be exceedingly valuable and fortunate, inasmuch as at one time we were the only source of the serum west of Chicago, and thus we were enabled beyond any manner of doubt to save the lives of a number of people by having this serum for distribution. More will be said concerning the distribution of serums, antitoxins and vaccines under the heading of "Antitoxins," etc.

RABIES.

The prevalence of rabies among dogs and other domestic animals in this state has been increasing to an alarming degree during the past few years. I believe it can be said without exaggeration that there is scarcely a county in the eastern half of the state that has escaped infection in some parts of the county. Large numbers of live stock have been lost due to being bitten by rabid dogs, the loss totaling a sum which, while it is impossible to accurately state because of lack of definite statistics, yet, according to Commissioner Mercer's estimate, is at least \$25,000. In a number of instances my personal attention was called to the fact that entire herds of

hogs were thus destroyed. But the loss of stock is perhaps the least important feature of the situation, as the danger to human life can hardly be exaggerated. It is estimated from such sources of information as are at hand that some 200 persons have been bitten in Kansas during 1911 and 1912 by what subsequently proved to be rabid animals, mostly dogs. During that time there have been three deaths from rabies or hydrophobia, results of such bites reported to the department. The Bell Memorial Hospital at Rosedale, through this department, since October 1 has given thirty-nine Pasteur treatments to the citizens of Kansas who have thus been bitten. A great many persons have gone to the Pasteur Institutes at Chicago and at St. Louis, and others have been treated in Topeka and elsewhere.

It is urgently recommended that some definite, specific legislation be enacted to suppress and control the increasing prevalence of rabies.

ANTITOXINS, SERUMS, VACCINES, ETC.

For the past two years the department has been distributing to the indigent poor of the state free diphtheritic antitoxins, stations for such distribution being established in every town in the state having a population of 500 or over. This distribution is based on the proposition of being a necessary measure for the prevention and suppression of diphtheria. The scientific world is a unit in its indorsement of this method of treatment of the sick, and of immunizing those who have been exposed to prevent them from taking the disease. Indeed, it is now unanimously recognized that there is no other scientific or effective treatment for diphtheria. The antitoxins being somewhat expensive, many times the poor people were unable to purchase it, and thus the only means of saving a life was denied them. Therefore, on the order of the Board and with the consent of the governor, the emergency fund of the department has been used for this purpose, and it is confidently asserted that such distribution has saved the lives of some 230-odd Kansas people. These figures are based upon well-known tables of mortality which obtain throughout the world on the difference in the death rate in the disease where antitoxin is used and where it is not used. These tables are so uniformly accurate, not only in this country but abroad, as to leave no basis of doubt about the chance of recovery with and without antitoxins. Using these tables as a basis of computation, we arrive at the above result, which is indeed a matter for much congratulation. Moreover, the staying of epidemics by this means undoubtedly saves hundreds of other cases of sickness, with the usual proportion of deaths, which number, of course, can not be estimated.

As indicated under the heading "Cerebrospinal Meningitis," the department is distributing other serums and antitoxins

that are now the only means of combating certain maglignant diseases. Tetanus antitoxin has also been added to the stocks, and typhoid, scarlet fever, cerebrospinal meningitis and scarlatina bacterins have likewise been added, and are used in the suppression of epidemics of these malignant diseases.

It is therefore recommended that the legislature provide the department with a special fund of \$2000 per annum for the purchase and distribution of antitoxins, serums and bacterins to be used in the way and manner above indicated.

CANCER.

A study of the return of deaths and their causes reveals the startling fact that cancer is alarmingly on the increase, not only in this state but throughout the entire country. Several months ago our lecturer on tuberculosis discovered, in a certain community in central Kansas, in an area of something like a mile and a half square, populated by twelve families, that among those twelve families there were eleven cases of cancer. If the department had the ways and means at its command, there is offered in this situation a rare opportunity for the study of the disease.

The Kansas State Board of Health ought to be so equipped that it would be able to utilize such unusual opportunities as present themselves to study and, if possible, to add to the sum total of knowledge concerning a disease that carried off, in the first six months of 1912, 517 cancer victims in Kansas.

TUBERCULOSIS.

Under the appropriation the last legislature made for carrying on an educational campaign for the study and suppression of tuberculosis, the department undertook a sociological and industrial study of the disease in the ten cities of the first class in this state. This work was carried on by Dr. J. J. Sippy, under the direct supervision and direction of this department, and his report, which will be found on another page, is worthy of the most careful study and thought of every citizen of the state, and especially every member of the legislature. The conditions found in a number of the cities were scarcely short of appalling, and indicated very clearly the reason for the endless chain of cases that are annually recurring and contributing to the sum total of deaths in the United States from tuberculosis—the enormous number of 150,000 annually. The state registrar's report on the number of deaths from tuberculosis in Kansas for twelve months, based on accurate reports for the first six months of this year, indicates that there occur in Kansas annually 1244 deaths from tuberculosis. Experts who make an estimate of the number of living cases, based upon the number of deaths occurring annually, use figures from 4 to 10, but using the smallest figures given by any authority, namely, the figure 4, we have four times 1244, which

is 4976, the number of cases in the state at the time this report is submitted.

During the seven weeks our investigator was in Kansas City, Kan., twenty-four people died of the disease, and I submit that if a like number of deaths had occurred from any other infectious disease in a city of 83,000 in that same period of time we all would have been alarmed and would have said that an epidemic of that disease was prevalent. It is but fair to indicate that the conditions in Kansas City are unusual, due to unusual labor and social conditions. Many of the laborers and poorer families work in Missouri and have their residences in the meaner sections of Kansas, City, Kan., and thus these conditions are accentuated; but nevertheless they are real, and a menace to the community in which they exist.

A similar study was undertaken of the crowded condition of Mexican laborers in shacks and box cars on railroad rights of way, and an equally shocking condition was found there. In many instances large numbers of people were found living in windowless box cars, and in several cases persons in the advanced stage of consumption were living in those crowded conditions with other people, without any precautions whatever being taken to prevent infection.

The attention of the railroad companies was called to these intolerable conditions and their promise secured to see that they were rectified, but the main point I wish to present to the legislature is that infectious diseases are very closely related to certain social and industrial conditions, and that real prevention and suppression can not be successfully instituted unless the department has the ways and means for making these studies in the manner above indicated, including the study of the causes of diseases and the methods of dissemination which are not known, as in the case of infantile paralysis and pellagra.

AN APPEAL.

I therefore appeal to the legislature and to the people of Kansas that the department be provided with a sum, not less than \$10,000 annually, to be devoted to the study and prevention of communicable diseases, this sum to be in lieu of the \$10,000 hitherto appropriated for the study of tuberculosis only. This study comprehends the usual educational propaganda that always goes with research work.

I repeat in the most emphatic manner of which I am capable that the suppression and prevention of communicable diseases can not be successfully accomplished unless these means are provided for the department.

EMERGENCY FUND.

The legislature has been in the habit each legislative year of providing a \$5000 emergency fund for the biennium to the State Board of Health. As indicated above, this has been used

in the study of pellagra and infantile paralysis and for the distribution of free antitoxins. The department should have an emergency fund for the purpose of meeting great emergencies, such as in case of cholera or plague, in a sum of not less than \$10,000 annually. Since it is now definitely known that the plague is disseminated through the medium of the rat and the flea, and as infected rats and squirrels have been found at various points along the Pacific coast, and the disease exists at the time of this writing in Porto Rico and Cuba, with infected rats found at New Orleans, it is not at all improbable that, through the shipment of merchandise, plague-infected rats might be transported to almost any part of the United States.

In the case of cholera it has likewise been demonstrated time and time again that cholera carriers exist the same as typhoid carriers, and that immigrants from infected ports carrying the cholera vibrio may come to this country and go to its remotest parts. It is through this means that cholera gained a foothold in the United States last year.

These facts are mentioned to show the necessity of every state being prepared to meet emergencies of this kind, and I therefore earnestly request that the legislature provide the department with an emergency fund of \$5000 annually for the purpose of preventing the entrance into or the spread within the state of epidemic diseases.

QUARANTINE LAW.

The present quarantine law was written many years ago. The advancement in medical science in the knowledge of the cause and dissemination of disease is such as to make our present quarantine law out of date, and it is recommended that the quarantine law be rewritten so as to bring it up to our present knowledge of the control of communicable diseases, and thus make it efficient and serviceable in guarding the health of the citizens of the state.

VITAL STATISTICS.

The legislature of 1911 enacted our present vital-statistics law. The appropriation made for its enforcement was, however, inadequate, and thus the large amount of work following the enactment of a law such as this has been carried on under considerable difficulties. The statistical data of births and deaths that have occurred under the law will entitle Kansas to be classed in the registration area of the Bureau of the Census at Washington before long, provided proper ways and means are furnished for its complete enforcement.

The vital-statistics law is "the big family Bible" of the state. Hitherto we have been content to register only our thoroughbred stock, the babies being permitted to shift for themselves, as it were, or to take chances in proving citizen-

ship, if that question should arise in after years, or to make proof of claims in settling estates, pensions, etc., as best they could. It goes without saying that the provisions of the child-labor law can never be fully enforced unless there are some legal and effective means for registering the birth of the child. Hitherto the statements of the parents were the only methods for determining the age of the child, and too often it has occurred that these statements were prejudiced or untrue, in that parents desired their children to work. Moreover, many legal questions concerning the age of consent have arisen, in which the liberty of the individual was in jeopardy because of designing or blackmailing schemes. Then, again, the work for the control of communicable diseases can not be effectively accomplished unless there is a means for tabulating the deaths from these diseases, by which we may locate accurately and certainly the foci of infection, through which means we are able to apply preventive measures. Last but not least, it is the desire of the department to use the data thus gained for the purpose of social betterment throughout the communities of the state. Vital statistics have not often been treated in this way, but it seems there is a wide field of opportunity to study the causes and conditions, social and industrial, of certain morbidity and mortality rates, of deaths due to industrial accidents, violence and crime; also, the relations leading to the large number of illegitimate births, with due regard for the rights of the innocent babe brought into the world, whose rights are ordinarily disregarded, having no champion to see that their legal status in the community is preserved by proper records. It is manifestly the duty of the state to see that such rights are guarded, and thus we hope through the division of vital statistics to undertake such sociological investigations as will lead up to betterments in social and industrial conditions. In order that this may be accomplished it is necessary that we have an appropriation of not less than \$6000 for such purposes. All fees for the issuing of certified birth and death certificates are turned back into the state treasury as required by law.

DIVISION OF FOODS AND DRUGS.

The detailed report of the division of foods and drugs, under the supervision of the assistant chief food and drug inspector, Mr. Floyd Tilford, appears on another page, to which your attention is invited. This is a division of the department's work which economically brings great returns to the consumers of this state through the enforcement of the food and drugs law and the weights and measures law, both of which laws are under the direct supervision of our traveling food and drug inspectors. It is believed that a very conservative estimate of the savings to the consumers of this state in the matter of adulterated foods and drugs and short weights and measures

would be a million dollars annually, comparing the conditions that existed five years ago, previous to the passage of these laws, with the conditions as they exist to-day. This is such a staggering sum as to be almost beyond the belief of one who has not made the matter a subject of thorough investigation, and yet there are documentary evidences in the department that will substantiate the above claim. We have on other occasions used as an illustration the item of oysters as they were formerly shipped, in tubs, being refrigerated by ice placed in the tubs with the oysters. This ice naturally melted, and the melted ice was sold as a part of the oysters at the current rate of 50 cents per quart. An estimate has been based on the amount of oysters consumed in this state annually, with samples analyzed that were secured before the passage of the law compared with oysters as marketed in this state at the present time, which reveals a saving to the consuming public close to \$100,000 annually.

Take a single illustration of short weight on flour. When we began the inspection of weights on flour several years ago it was an exceedingly rare thing to find a sack of flour that was full weight; the sacked flour was short in weight all the way from one-quarter of a pound to three pounds. It is true that there is a certain shrinkage during certain seasons of the year by evaporation of moisture, and yet, from experiments conducted by Professor Willard on the loss of weight of stored flour, a quarter of a pound would be a reasonable amount for an average sack of flour stored under ordinary conditions. Moreover, freshly packed flour was found to be short in weight, in which there could be no claim made for shortage due to loss through evaporation. In a certain shipment of a car of flour from a mill having a capacity of 1500 barrels daily, we found that the shortage on that car of freshly packed flour was an amount, computed on the full capacity of the mill, that would make a net profit on short weight of \$65 per day. At this time the mill was running to its full capacity, and although I doubt if it does so run the year around, yet the point is that it was only one mill out of many; and whereas we find that most of the flour was formerly short in weight in the sack, it is my candid opinion that half a million dollars annually would not cover the item of short-weight flour, comparing conditions at that time with present ones.

Take the matter of marketing new potatoes: For years it has been the custom in the Southern states to harvest new potatoes during the wet season, or periods of time, for the express purpose of having mud stick to them in order that the weight might be increased, for new potatoes are always sacked and sold by weight. Two years ago one car of potatoes was carefully sorted out from the dirt, in which car we found something over 3400 pounds of dirt. Last year another car that was similarly treated revealed a ton and a half of dirt. With

the enormous amount of potatoes sold in this state, the dirt content, if approaching even in a small degree that of the two cars mentioned and two or three others which our inspectors found, would run into a sum almost beyond belief.

Before the passage of the law it was the rarest thing in the world to find a pure ground spice or genuine ground coffee. Absolutely pure maple syrup was unknown. Thus might be mentioned a multitude of articles of a similar nature which now are of high-grade quality, and while in some instances these purer articles of food and drugs are higher in price than the former adulterated products, yet in many instances, as in the case of oysters, they are not any higher in price, indicating that the adulterated content in them was pure graft.

The experience of our laboratories in the analyses of drugs reveals the fact that formerly drug adulteration was quite as prevalent as the adulteration of foods. This means not only a great economic loss to the consumer, but, what is vastly more important, a great danger, in that reliance for therapeutic effect is put in drugs that are not of standard strength and quality. I am glad to say that these conditions are now happily fast becoming past history.

Important as this economic feature for the enforcement of the food and drugs law is, yet perhaps what is of even greater importance is the changed sanitary condition brought about in places where foods and drugs are prepared, stored and sold. Particularly is this true in the case of slaughterhouses, meat markets, bakeries, restaurants and hotels, and in many of the poorly equipped grocery stores. Unquestionably much of the loss and waste in spoiled food products, as well as considerable sickness to the consumers thereof, was the direct result of filth contamination. It may be remarked in passing that most of the prosecutions brought by the department during the past biennium have been because of unwholesome and unsanitary conditions found in these places.

Weights and Measures.

With our small force of traveling inspectors and the large amount of work to be done, the department has been unable to inspect all scales for weights and measures, our work being confined almost entirely to the inspection of scales for weights and measures found in drug and grocery stores. We have on several occasions made special inspections of large wagon scales at different points in the state for the purpose of ascertaining the condition of such scales, and have arrived at the conclusion that from 25 to 35 per cent of all large wagon scales are not within the limit of tolerance—ten pounds to the ton. That is to say, they do not come within the ten-pound limit of weighing an actual ton, in some instances short-weighing and in other instances overweighing. When it is remembered what an enormous volume of commerce is transacted

over the wagon scales in this state daily, probably running into the millions of dollars each day in weighing farmers' produce, such as wheat, corn, oats and other grains, hay, cattle, hogs, and such merchandise as coal, ice, building material of all kinds, and other heavy commodities, it is apparent at once that if 25 per cent of these scales are without the limit of tolerance that business is not upon a sound basis, either from the standpoint of competition between merchants and dealers or from the standpoint of values received for money paid. It is therefore recommended that the legislature provide two special weights and measures inspectors, who will also be given the authority of sealing weights and measures, for which under the law they are entitled to certain fees, and it is believed that these fees will approximately cover the expense of such inspection. It is not infrequent that we receive urgent letters from farmers all over the state requesting the inspection of scales here and there, as they believe them to be inaccurate, which requests we are at present unable to grant.

One of the great economic questions in food supplies is that of cold storage of food products. The Association of State and National Food and Drug Control Officials have recommended a model cold-storage law for uniform adoption throughout all the states, which will be presented to the legislature with the recommendation that it be passed.

DIVISION OF WATER AND SEWAGE.

The report of the engineer of the State Board of Health will be found on another page, to which your attention is invited. Since the enactment of the so-called water and sewage law, in 1907, a vast amount of good has been done in the division of the Board's work looking toward the purification of city water supplies and in the securing of new supplies to cities that would not only be sufficient in quantity but wholesome in quality; also undertaking to prevent the pollution of the natural watercourses of the state by domestic sewage and industrial wastes, and to restore those that were overburdened with such sewage and waste to something like their former state of purity. This work has entailed a large amount of investigation and research, with results that are more than commensurate with the time and money expended. Most of our populous cities in the southeastern part of the state are wholly dependent for their source of water supply from the near-by streams; thus the question of the purity of such waters is of health and life importance. Gradually the cities located on streams that are used as a source of public water supply have put in sewage-purification plants, and cities using such streams as a source of supply have added to their water plant modern filtration apparatus, so that the number of cities in the state that are not using a pure and wholesome water is growing increasingly smaller each year.

At the request of this department, the federal government has completed the survey of the Missouri river, an interstate stream, the report of which is submitted in another place in this report. It is confidently hoped that those cities in other states now discharging their untreated sewage into the Missouri river may join with Kansas in constructing such sewage-purification plants as will insure the comparative purity of the Missouri river, which is being used as a source of water supply by more than a million and a half of people.

The improved condition of the water supplies in the state has been revealed in a lower morbidity and mortality rate from typhoid fever, and it is believed that the theorem propounded by a prominent sanitarium, that three times as many other diseases are prevented by the use of a pure water supply, will apply with equal certainty to the improved conditions of Kansas water supplies as above intimated.

Our chief handicap in the work has been lack of funds, the work having grown to such an extent that it has become necessary to have an assistant engineer, and our sanitary fund of \$2500 annually is therefore inadequate to carry on the work of this division. Moreover, it is greatly desired that additional funds be procured for the purpose of carrying on research work in the matter of treating industrial wastes, which has been undertaken in a small way this past year, and it is therefore recommended that our sanitary fund be increased to \$5000 annually.

HOTEL INSPECTION.

The work of inspection of hotels under the hotel law has been carried out to the best of our ability, chiefly through the county health officers and local fire marshals. The work has been well done in some counties, fairly well done in others, and indifferently done in still others, depending largely on the personnel and interest of the local health officers. Our experience in the enforcement of this law during the past four years has been such as to lead me to believe that it can not be uniformly and effectively enforced all over the state unless the inspection is under state inspectors, by which means local interference will be removed and compliance with the law obtained. It is respectfully recommended that the enforcement of the hotel law be given to the state labor commissioner, who has the inspection of all other public buildings excepting hotels, or that an independent commission be established which will be charged with the enforcement of the hotel-inspection law.

HEALTH OFFICERS.

The time has already come when the county health officer and the health officers of the cities of the first class are really the most important officials in their communities, when considered from the standpoint of the public-health service that

is now required of them under the present laws; and yet almost uniformly we find these same officials are the most poorly paid of any of the county or city officials.

Two years ago the State Board of Health, in cooperation with the School of Medicine of the University, established a summer school for physicians and health officers, the second annual school being held in June, 1912. The object of this school is to instruct health officers in the latest and most modern phases of sanitary work, including the nature and suppression of communicable diseases, the equipment and conduct of modern laboratories, the fundamentals of public hygiene and sanitation, including all of those essentials of hygiene related to the health officer's duties. In other words, the health officers of the state have thus been preparing themselves for competent service to the people, and this service should be promoted and recognized by such legislation as will attract the most capable, scientific physicians to the positions of health officers and will insure their respective communities a full measure of protection from conditions that menace the public health. I therefore recommend that health officers be put upon such a basis of salary, in accordance with population, as will be commensurate with their services, and also that attendance at the summer school by health officers be made compulsory, except in case of sickness.

SANITARY CONDITION OF STATE INSTITUTIONS.

All the state institutions have been visited by committees from the State Board of Health, and in a general way the sanitary conditions of these institutions have been found highly satisfactory. Special reports of these inspections can be found in the offices of the State Board of Health.

APPROPRIATIONS.

The following appropriations are recommended to conduct the department during the coming biennium:

	1914	1915
Secretary	\$2,500	\$2,500
Three clerks and stenographers at \$900 each.....	2,700	2,700
Sanitary fund for carrying out the provisions of chapter 382, Laws of 1907, and for investigations into stream pollution and industrial wastes.....	5,000	5,000
Miscellaneous and incidental expenses, including the expenses of the chief food and drug inspector to the annual conference of the Association of State and National Food and Drug Control Officials, as authorized in section 12 of chapter 266, Laws of 1907, and the expenses of a representative of the State Board of Health to the annual meeting of the State and Territorial Boards of Health and the conference of the surgeon general of the public-health service with the state health officers, as authorized by an act of Congress, July 1, 1902, and for other trips outside the state upon the order of the governor.....	3,000	3,000

For the purpose of the free distribution of anti-toxins, serums and vaccines to the indigent poor of the state.....	\$2,000	\$2,000
For original research and investigation into and for the suppression of communicable diseases and industrial and occupational diseases.....	10,000	10,000
Emergency fund to be used only upon the approval of the governor, for the purpose of preventing or suppressing epidemic diseases, the unexpended balance of the 1914 appropriation to be reappropriated for 1915.....	5,000	5,000

DIVISION OF VITAL STATISTICS.

For the purpose of carrying out the provisions of chapter 296, Laws of 1911, known as the vital-statistics law	6,000	6,000
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DIVISION OF FOODS AND DRUGS.

Assistant chief food and drug inspector.....	1,800	1,800
Six food and drug inspectors, but in no wise shall the amount paid to any inspector exceed the scale provided in section 4, chapter 184, Laws of 1909,	9,000	9,000
Traveling expenses of inspectors.....	7,200	7,200
Samples of foods and drugs and incidentals.....	500	500
Salary of bacteriologist.....	1,200	1,200
For equipment and maintenance of state laboratory of hygiene	500	500
Expenses of members of Board, postage and incidentals	1,200	1,200

ARGUMENT.

An increase in the sanitary fund is asked for the reason that the work in the division of water and sewage has grown until two engineers are required to properly take care of it. Moreover, in solving the problems of industrial wastes that are polluting many of our streams that are being used as a source of water supply, considerable research work must be done before it is possible to find a solution for the purification of such wastes. This work can not be done without an increase in appropriation for the sanitary fund.

Instead of using our emergency fund for the purchase and distribution of free antitoxins and for research work in the cause and dissemination of certain infectious diseases, such as infantile paralysis and pellagra, we are asking a special appropriation to be made for that purpose, in order that the emergency fund may be utilized only in case of great emergency—these funds in lieu of appropriations made hitherto for tuberculosis, for which we are not asking this biennium.

The appropriation of \$2500 a year for the division of vital statistics is insufficient to carry on that division's work, as indicated in another place in this report. The sum asked is the lowest possible sum for which this work can be efficiently performed.

We are asking an increase of the inspectors' traveling fund over what it was two years ago, as \$85 a month for traveling

expenses is entirely too small, and \$100 a month, the amount asked, is barely enough to keep the men on the road all the time.

The appropriation for samples is included in a separate item.

The amount for the Board's expenses is too small to have the full number of meetings annually as required by law; therefore an increase is asked.

It will be noted that with the elimination of the \$10,000 hitherto voted for a state-wide educational campaign against tuberculosis, which is not included in this budget, that the above amounts will not exceed in their total sum what has hitherto been appropriated by the legislature, and yet by this arrangement it will permit the department to carry on its work more efficiently.

Kansas opens wide her doors to all peoples. It is in the health of a state and the citizens thereof that it grows; it is not in disease that it erects—it is in pestilence that effort ceases and hope dies. In the not very long ago you created a department of health. You bade it guard the health interests of the citizens of the state; you gave it a trust that may not be broken; you charged it with a vigil that is sacred. Thus you assumed a duty; in fact, you tendered fealty to this one of your greatest departments—for did you not bid it watch over the lives and health of men, women and little children? Is there any right more important than the right to live? Do you prefer a higher death rate than a trifling increase in the tax rate.

The wages of filth is disease, which neither creed, nor faith, nor party may forget!

Respectfully submitted.

S. J. CRUMBINE, *Secretary.*

SECRETARY'S REPORT.

THE SECOND AND THIRD QUARTERLY MEETING OF THE
STATE BOARD OF HEALTH.

MARCH 1, 1911.

MR. PRESIDENT AND GENTLEMEN OF THE BOARD—The regular second quarterly meeting of the State Board of Health was omitted for the reason that there were not enough funds to hold the four regular quarterly meetings of the Board as provided by law, and it seemed expedient that the December meeting be omitted.

EPIDEMIC ANTERIOR POLIOMYELITIS.

The epidemic of anterior poliomyelitis, prevalent in the state during the past summer and autumn, continued until cold weather came, since which time there have been no cases, excepting one case reported from Lyon county on February 15. The number of cases and deaths occurring during last year's epidemic, by counties, is as follows:

County.	Cases.	Deaths.	County.	Cases.	Deaths.
Atchison	1	0	Montgomery	1	1
Brown	15	4	Nemaha	2	0
Chautauqua	2	1	Norton	3	0
Cherokee	1	0	Osborne	1	0
Cheyenne	2	1	Ottawa	2	0
Clark	1	0	Pawnee	1	0
Cloud	8	1	Phillips	5	2
Crawford	11	2	Pottawatomie	1	0
Decatur	4	1	Pratt	2	1
Dickinson	1	0	Reno	4	0
Douglas	6	3	Republic	7	1
Ellis	4	2	Riley	6	3
Gove	1	1	Rush	2	1
Greeley	1	0	Saline	2	0
Greenwood	1	0	Scott	1	1
Hodgeman	1	1	Sedgwick	3	1
Jefferson	4	1	Shawnee	16	4
Jewell	4	1	Sheridan	3	1
Johnson	3	0	Smith	1	0
Kingman	2	2	Sumner	1	0
Kiowa	1	0	Wabaunsee	5	2
Leavenworth	2	1	Washington	2	1
Linn	1	0	Wyandotte	33	3
Lyon	1	0			
McPherson	14	4	Totals	196	48

Experimental work with monkeys has been carried on by Dr. A. L. Skoog at the University Hospital at Rosedale, and he has succeeded in transmitting the disease from one monkey to another, after the method of Flexner and Lewis of the Rockefeller Institute of New York.

The appearance of a case in Lyon county this early in the year does not auger well for the coming season. The suggestions of the State Board of Health made in the special meeting in July have been effectively carried out, and we have reason to believe that the epidemic has been held in check by these strict quarantine measures.

WATER AND SEWAGE.

The existence of an unusual amount of typhoid fever in the cities of Leavenworth and the two Kansas Citys during the past season, with an extensive epidemic at Omaha, Neb., St. Joseph and Parkville, Mo., and the fact that all these cities secure their water supply from the Missouri river, naturally suggests that the cause of these epidemics is due to a polluted condition of the waters of the Missouri river, and also brings up for solution the old problem of the sanitary control of interstate streams. It is interesting to note that this is one of the problems which neither the federal government nor any single state has authority or power to solve and correct, due to our peculiar form of dual government.

The problem of the sanitary control of interstate streams has been brought to the attention of the federal government time and time again, and they have definitely decided that they have no such control of these streams. So it would seem that the only way in which a matter of such tremendous importance to the more than a million and a half of people who live upon the banks of this great interstate waterway, and who are dependent for their source of water supply on the same, is by a concerted and united action of the various sovereign states which touch its borders. I was therefore constrained to submit the matter to Governor Stubbs, requesting that he address the governors of the states of Missouri, Iowa, Nebraska and South Dakota, setting forth the facts before stated, and requesting that they appoint representatives of the health departments of those states to meet with representatives from Kansas, to the end that some common ground of action might be agreed upon whereby the purity of the waters of the Missouri river might be preserved.

Accordingly, a conference was called of representatives from the aforesaid states, to be held at Kansas City, at the Baltimore Hotel, on December 29, 1910. The representatives from Kansas included Doctor Allaman, mayor of Atchison; Dr. C. C. Goddard and Dr. J. L. Everhardy, of Leavenworth; Dr. Clay E. Coburn and Dr. Farquhard Campbell, of Kansas City, Kan.; and your secretary, representing the state at large. But owing to illness I was unable to attend, and therefore asked the engineer for the Board, Prof. Wm. C. Hoad, to represent this department, which he did with great ability.

After a discussion among the conferees present, and an organization, of which Dr. Allaman, of Atchison, was elected chairman, and Professor Hoad secretary, resolutions were passed and adopted, and the secretary instructed to prepare a memorandum of the meeting, including copies of the resolutions, which were to be submitted to the governors and the boards of health of the five states that were invited to the conference. Professor Hoad has accordingly submitted the following memorandum to this department, which is herewith attached and forms a part of this report:

Memorandum of the Missouri River Sanitary Conference called by Governor Stubbs and held at Kansas City on December 29, 1910.

After an initial statement in regard to the object of the meeting, the conference entered into a general informal discussion, in the course of which the following propositions were prominently set forth, namely:

First. That the Missouri river is an important water-supply stream, being used for this purpose by cities, aggregating a population of about 800,000, from Sioux City to Kansas City. St. Louis, 400 miles farther down, supplies its 700,000 people with water which is largely from the Missouri river. The water from the Missouri is essentially good water for municipal purposes and is readily purified.

Second. The river is receiving a considerable burden of city sewage and manufactural wastes, and owing to the rapid growth of population and industries upon its drainage area, this burden of wastes is increasing

with each year. The sewered population upon the drainage area is estimated at from 1,500,000 to 2,000,000, of which over one-half discharges sewage directly into the main stream. No estimate of the amount of industrial wastes was given, but attention was called to the large packing industries at Omaha, St. Joseph and Kansas City. These wastes, while not in themselves disease-producing, help to form in the river a favorable environment for the multiplication of disease germs introduced from city sewers.

Third. The typhoid fever situation in several of the Missouri river cities was discussed in some detail by the conferees from these cities— notably, one very serious epidemic in Omaha, caused by the failure of the local water company to effectively purify the Missouri river water before pumping it into the city mains, was described by Doctor Connell of that city.

Fourth. A map of the drainage area of the river was presented, showing the principal centers of population, and showing particularly that the density of population from Sioux City to Kansas City is very great and is rapidly increasing. Also, the average and the low-water discharges of the river were given, together with other physical data relating to the regimen of the stream. A table was presented showing the distance by river between the principal cities along its bank from Sioux City to St. Louis, and the estimated number of hours occupied by water in the center of the stream in flowing from Sioux City to Omaha, from Omaha to St. Joseph, from St. Joseph to Atchison, from Atchison to Leavenworth, from Leavenworth to Kansas City, and from Kansas City to St. Louis, at time of average and of minimum discharge. A few fragmentary data on the bacterial content of the river at certain points were also given.

Fifth. It was the unanimous opinion of the conferees that any definite legislative action looking toward the limitation of the discharge of sewage and industrial wastes into the river should be made common to all the states contiguous to the stream. Much was made of the possible unfairness should one or more states fail to unite in such preventive or remedial action.

Sixth. There was considerable talk of trying to secure an investigation of the stream by the federal government. This idea was finally abandoned, both because little hope was entertained that a request for such an investigation would be acceded to, and especially because it was felt that to be effective with the legislatures of the several states the investigation should proceed from the states themselves. It was thought, however, that it might be possible for a joint state commission to secure the coöperation of the hydrographic branch of the United States Geological Survey or of the Marine Hospital Service.

The definite action taken by the conference consisted of the adoption of a resolution, and the appointment of a committee to endeavor to carry the spirit of the resolution into effect. The resolution declared that the sanitary condition of the Missouri river from Sioux City to the mouth was such that it was the judgment of the conference that a thorough investigation of the river should be made by a joint Missouri river sanitary commission, which should include representatives from at least Nebraska, Iowa, Missouri and Kansas. The committee appointed consisted of a representative from Nebraska and one from Kansas, who were instructed to draught a plan for the organization of such a sanitary commission, and to present this plan to the governors and health departments of the several states and ask for such legislative and executive action as might be necessary to perfect the organization. The general idea discussed and assented to in the conference was that this commission should consist of two or three commissioners from each state,

and that these should carry the investigation through to completion and report back to the several states in the fall of 1912.

The conference adjourned, subject to the call of the chairman.

The following is a copy of the joint resolution that will probably be recommended to the governors and heads of the health departments of the several states:

"Joint Resolution, providing for a commission to investigate the sanitary condition of the Missouri river and to recommend measures to conserve the waters of the streams as a source of public water supply, and requesting the legislatures of the states of South Dakota, Iowa, Nebraska and Missouri to cooperate by appointing similar commissions.

"WHEREAS, The Missouri river is at present used as a source of public water supply by a number of cities, both large and small, situated upon its banks; and

"WHEREAS, To all these cities the said river is the most available and practicable source of public water supply, and will continue to be so in increasing degree with the future growth in their population; and

"WHEREAS, The said river is known to be polluted by the discharge into it of unpurified city sewage and industrial wastes from the cities and manufacturing establishments upon its drainage area; and

"WHEREAS, The said pollution has already in certain portions of the river reached a point at which it constitutes a serious menace to the health of the inhabitants of the cities and towns along the said river, and

"WHEREAS, The said pollution must inevitably greatly increase with the growth in population and the development in industrial activity assured for the future, unless proper measures to prevent it are promptly taken; and

"WHEREAS, The protection of the Missouri river against injurious pollution and the conservation of its waters for purposes of public water supply are possible only by the joint action of the legislatures of the several states affected thereby: therefore, be it

"Resolved by the Legislature of the State of Kansas, That the governor of the state of Kansas appoint a commission of three persons to cooperate with similar commissions appointed from other states in an investigation of the sanitary condition of the Missouri river with reference to the future use of the said river as a source of public water supply; that the commissioners so appointed shall serve without compensation, except that their actual and necessary expenses shall be paid; and that the said commissioners shall report their findings to the governor with recommendations for such legislative action as they may deem wise and necessary.

"That the governor of the state of Kansas transmit a copy of this resolution to the governors of the states of South Dakota, Iowa, Nebraska and Missouri, with the request that the legislatures of these states cooperate by appointing similar commissions."

At a subsequent conference with the governor, in company with Professor Hoad, the governor appointed the following commission to represent Kansas, in conformity with the resolutions adopted, namely: Prof. Wm. C. Hoad, engineer State Board of Health; Prof. F. H. Billings of the department of bacteriology of the University of Kansas, and Dr. S. J. Crumbine, secretary of the State Board of Health, chairman. It is sincerely to be hoped that the other four states will act in like manner and appoint commissioners to unite with Kansas, by which during the coming two year a most exhaustive study and sanitary survey of the Missouri river may be accomplished for presentation to the legislatures two years from now.

The routine matters of the division of water and sewage that has occurred since the last meeting of the Board will be reported in detail by the engineer for your approval.

HOTEL INSPECTION.

The 1911 inspection of hotels has not yet been called for, pending the result of the legislation in which it is proposed to turn this work over to the state labor commissioner.

There has occurred no reason to modify my observation made at the last meeting, in which it was set forth that the present system of hotel inspection by county health officers is more or less of a failure, being good in some counties, fair in others and indifferent or bad in still others. I have, however, the following recommendation to make, which recommendation was submitted to the grand grievance committee of the U. C. T. of Kansas and Oklahoma, who agreed to the proposition and expressed their belief that the order should be made—and that is that the public drinking cup should be abolished from all the hotels in Kansas.

Several months ago I was in a certain city in the northwestern part of the state, and a physician of that city, of high repute and of state-wide reputation, told me that he was then treating a case of syphilis, the inoculation of which took place through the so-called common drinking glass in a hotel in a neighboring city. He declared that there was scarcely a possibility of doubt that such was the case, and even thought he knew the probable source of infection, as he was at the time treating a traveling man for the disease, who then had a large number of mucous patches in his mouth. This physician was very emphatic in his request that the Board immediately take one more step in the right direction and abolish the common drinking cup in the hotels of Kansas, over which this department has sanitary jurisdiction under the law.

It might be well enough to take another step right here—although I am hardly prepared to make that recommendation at this time, as we have made no scientific investigation, as we have done in the cup—and that is the abolishment of the roller towel in the hotels of the state. I would, however, ask that the Board give the matter its serious consideration.

FOODS AND DRUGS.

It was my privilege to attend the eleventh annual meeting of the state and national food and dairy commissioners at New Orleans, from November 28 to December 2. The meeting was a most instructive as well as a very agreeable one, as the entertainment was most lavish and the climatic conditions were exceedingly pleasant and favorable for midwinter to a northerner.

The real work of the convention, in a general way, is summarized in the following resolutions which were unanimously adopted:

Resolutions Adopted by the Association of State and National Food and Dairy Departments.

"At a meeting of the Association of State and National Food and Dairy Departments, held in New Orleans from November 28 to December 2, the following resolutions were unanimously adopted:

Resolved, That we are gratified at the progress already made to secure uniformity in food and drug legislation, and urge that this association use its best efforts to bring about complete uniformity in all food and drug laws.

"WHEREAS, It is the belief of this association that the enforcement of the national food and drugs act of June 30, 1906, and the enforcement of the pure food laws of the various states, which laws are patterned thereafter, are seriously hampered by the absence of legal standards for foods: therefore, be it

Resolved, That this association urges upon Congress the enactment of a law providing for the appointment by the President of the United States of a food standards commission, to be composed of food-law officials and chemists, state and national, connected with the enforcement of food laws, and representative manufacturers, producers and dealers in foods, which

commission shall fix food standards to be used in the enforcement of the food and drugs act.

Resolved, That it is the judgment of this association that each state should enact suitable legislation to secure sanitary inspection of all places where food or drugs are prepared or sold or manufactured.

Resolved, That this association favors the enactment by Congress and the various states of a weight and measure branding law, and that any such law be so framed as to make fair and reasonable allowance for the inevitable variations of weight and measure due to shrinkage, evaporation or other natural causes, and the unavoidable slight variations attendant upon the weighing or measuring of individual packages; and that the interests of consumers, manufacturers and dealers alike demand that weight and measure laws, like all food laws, should be uniform.

Resolved, That experience has shown that efficiency in food-control officials increases with experience, and the people are entitled to have continuously, in connection with the enforcement of food-control laws, the services of trained, experienced, administrative and technical men; therefore, this association urges that the enforcement of food-control laws be divorced from politics.

WHEREAS, There appears in many of the papers, journals and magazines of this country false and misleading statements concerning the therapeutic value of so-called patent or proprietary preparations, which are intended to and do deceive the public; therefore, be it .

Resolved, That this association deprecates such advertisements as being a menace to the public welfare and contrary to the spirit of the national food and drugs act."

ANTITOXIN DEPARTMENT.

Since the installation of the antitoxin division, which was established about a year ago, there has been distributed free to indigent persons in this state 146 packages of 1000 units, 162 packages of 3000 units, and 1999 packages of 5000 units.

It is gratifying to note that during the past two months there has been little use for the antitoxin, owing to the almost entire absence of the disease throughout the state.

Using as a basis for computation the generally accepted rates of mortality in diphtheria where diphtheria antitoxin has been used, as compared with the same number of cases where it has not been used, we arrive at the most gratifying conclusion that the free distribution of this serum by the State Board of Health has been instrumental in saving 102 lives during the past year. I am very sure that the members of the Board will join with me in the sentiment that this has been indeed worth while.

I believe that our experience in the distribution of diphtheritic antitoxin has been so successful, and has been so highly appreciated by both physicians and laymen, that the Board might, for the same reason for which they are distributing the free diphtheritic antitoxin, also arrange for the distribution of antitoxins, vaccines or serums of a number of the other malignant infectious diseases. I have been in correspondence with the H. K. Mulford company concerning terms for the antimeningitic serum, antirabic serum and for several of the bacterin, particularly typhoid bacterin. I would recommend to the Board that they authorize the secretary to make such arrangements and enter into such a contract as will permit this Department to furnish these various serums, vaccines or bacterins to the indigent poor of the state.

CONTAGIOUS AND INFECTIOUS DISEASES.

Early in December Doctor Alexander was requested to go to investigate an epidemic of smallpox, existing on the borders of Brown and Doniphan counties, that had been giving the local community considerable trouble. Early in the same month Doctor Carver was requested to

go to Toronto, in Wilson county, on a similar mission; in February Doctor Milligan kindly consented to go to Stafford county to investigate a widespread epidemic of scarlet fever, and Doctor Thompson, through his partner, Doctor Pine, made a similar investigation in Meade county. It is suggested that these doctors make their personal reports to the Board.

The educational campaign against tuberculosis continues, through our traveling exhibits and our lecturer, Dr. S. C. Emley, and I am pleased to report that the exhibit is everywhere received with great interest; many, and in fact most places, the evening lectures are given to crowds with standing room only. Up to the present time there have been in the neighborhood of 225,000 people, according to actual count, that have seen the exhibit and heard the lectures.

The federal government seems to be more or less concerned as to the possibility of Asiatic cholera regaining a foothold in this country. A large number of immigrants are coming from certain infected ports in Italy and from infected districts in Russia. With all the precautions exercised at these stations and at the ports of entry in this country, nevertheless some five or six cases have reached the port of New York. Inasmuch as this disease may be disseminated by carriers, similar to that of typhoid fever, the Public Health and Marine Hospital Service has taken the precaution to send out a warning to state boards of health, and are sending destination slips to the state health officers of all immigrants coming from infected ports; these slips, in turn, are sent to the county or city health officers at the point of destination, and an effort made to keep them under surveillance for a short time after their arrival in this country. Our laboratory has been furnished with agglutinating serum, in order to make a quick test of any suspected cases that may develop. The following circular letter was issued to the health officers under date of December 16:

"To County and Municipal Health Officers:

DEAR DOCTOR—I am inclosing herewith a pamphlet issued by the United States Public Health and Marine Hospital Service on "Cholera, Its Nature, Detection, and Prevention," which I trust may be of interest to you, as well as an aid in detecting any possible infection of cholera in your district.

"Reports are being received from the immigration officials of all immigrants from cholera-infected ports, destined to points in Kansas, and these are being sent out to the local health officers as soon as received.

"Very truly yours, S. J. CRUMBINE, M. D., *Secretary.*"

In October a communication from Dr. C. R. Carpenter, city physician of Leavenworth, was received, calling attention to the increasing prevalence of rabies in and about Leavenworth and asking the aid and assistance of the State Board of Health in issuing an order for the muzzling of dogs. I replied that there was no law upon the statute book giving this department such authority, but that I would write to the county boards of health of Leavenworth, Jefferson and Atchison counties, reciting the danger to persons and live stock in those respective counties, and to the fact that quite a number of persons have been bitten and a considerable number of live stock destroyed owing to the large number of rabid dogs and cats in those counties. Accordingly, the following letter was sent to the county board of health, as hereby indicated:

"OCTOBER 27, 1910.

"Hon. Board of County Commissioners, Oskaloosa, Kan.:

"GENTLEMEN—Evidence has come to this office that there have been a number of people in your county bitten by rabid dogs, and that a considerable amount of stock have been thus bitten, become infected and have perished owing to what seems to be a wide infection among the dogs of your county and adjacent counties.

"I most strongly urge that you immediately assemble yourselves in

extra session and pass a resolution reciting the above conditions, and then make an order providing that every dog in the county shall be muzzled for a period of ninety days from date, and order the sheriff and his deputies to shoot upon sight every dog not thus muzzled.

"This notice should be displayed in your official county paper in order that it may be made effective at the earliest possible date. Human life is too precious to hesitate or put off a matter of such great importance.

"While there is no specific statute concerning the muzzling of dogs, yet the local boards of health are charged by the laws of the state with the supervision of the health of the citizens of their respective counties, and it is my judgment that any reasonable order that your honorable board may make or method you may take to preserve the lives of your citizens and prevent the destruction of the domestic animals of your county will be upheld by any court in the land. There is absolutely only one way by which this epidemic may be controlled, and that is by the above method.

"I trust that I may have your assurance that this will be done.

"Very truly yours, S. J. CRUMBINE, M. D., *Secretary.*"

A similar letter was written to the Johnson county board of health a little later.

DELINQUENT HEALTH OFFICERS.

The difficulty with the two delinquent health officers reported at the last meeting has been satisfactorily adjusted, one by the removal from office by the county board of health, and the other by compliance with the general health law and the regulations of this Board; hence the necessity for citing these officers before the Board for trial no longer exists.

Upon complaint of the president of the State Federation of Labor, an inspection was ordered of certain railroad camps, as to their sanitary condition and the food supply. The inspector, Mr. Floyd Tilford, submitted a report.

Respectfully submitted.

S. J. CRUMBINE, M. D., *Secretary.*

SECRETARY'S ANNUAL REPORT.

June 12, 1911.

MR. PRESIDENT AND GENTLEMEN—Another fiscal year is drawing to a close and, as is our custom, I take pleasure in submitting a condensed inventory of the year's work.

In a general way I think it can be said that the Board's policy of progress has been maintained, not only in the work of the divisions already inaugurated, but in the solution of new problems.

EGGS.

Before summarizing the work for the year I desire to advise you of certain important matters that have occurred since the last quarterly meeting.

On April 19 a meeting of the egg shippers of the state was held at the Throop Hotel, together with representatives of this department, of the State Agricultural College and of the Bureau of Animal Industry of the United States Department of Agriculture. The meeting was held for the purpose of devising ways and means to improve the quality of the Kansas egg. After a thorough discussion it was agreed by all shippers present that on or before June 1, eggs should be sold only on the "loss-off" basis; that is, subject to candling.

Accordingly, notices, in the shape of a large poster were sent to every dealer in the state whose address we had, warning them against the sale of eggs that are unfit for food, and advising the dealer that on or before June 1 all eggs should be bought and sold subject to candling. The effort put forth in this direction a year ago was instrumental in greatly improving the value of the Kansas egg on the Eastern market, and I have no doubt but what the grade and quality of the Kansas egg during the coming year will be even better.

Too much praise can not be given to the Kansas Car-lot Shipper's Association for their hearty coöperation in the enforcement of the food and drugs law as it applies to the sale of eggs unfit for use.

Coincident with this campaign, it has been arranged that a representative of the Bureau of Animal Industry be allowed to speak to the audience assembled at our tuberculosis exhibit on the afternoon of one day in each town which we make. It is believed that much good can be accomplished along these lines of education in the proper care and marketing of eggs. This arrangement will probably be continued during the hot weather season.

ANTIFLY CAMPAIGN.

In April of this year we published our usual annual fly BULLETIN, and put into effect the methods we have been using in past years in carrying on our antily campaign. Every letter that leaves our office contains a copy of the "Swat-the-Fly" leaflet. The fly poster, which has been revised, has been sent to every post office in the state, with the request that it be conspicuously displayed. Many encouraging reports from postmasters have been received, indicating the value of these posters in directing public attention to the dangers of the house fly. Our inspectors are requiring all places where foods and drugs are prepared or offered for sale to be effectively screened, and our traveling tuberculosis exhibit is showing to full houses our moving picture on the "Fly Pest."

In addition to these methods, we have succeeded in arousing an interest among the Boy Scouts in a great many cities of the state in the matter of city cleanliness, particularly as related to the breeding places of flies.

Weir City has the distinction of first starting the Boy Scout antily movement. These boys not only made a clean-up of all the trash and

garbage of the city, but made a sufficient number of fly-swatters to place two in every house in the city, and succeeded in having the Commercial Club finance the project of making a large number of flytraps, which were placed about the streets. They then appeared before the mayor and council with a view to securing the passage of the antily ordinance, which the department published in the BULLETIN a year ago. It certainly must have been a sight worth seeing, if one had been there to hear these juvenile patriots reading the essays, which they had with much care and labor prepared, in argument for the necessity of the passage of the ordinance. You may be assured that their enthusiasm was rewarded, and the boys have pledged themselves to see that the ordinance is literally enforced. The ordinance provides for the removal of manure heaps within certain specified times, and also provides that all outside toilets shall be made fly proof.

This movement has extended to a great many cities, and in order that it might be properly directed your secretary secured the assistance of the Rev. Walter Burr, of Olathe, who has had a large experience in the Scout movement. Reverend Burr has been untiring in his labor and enthusiasm, and has secured the clean-up of quite a number of Kansas towns through the Boy Scout organization, and has been the means of distributing thousands of our leaflets and other fly literature.

I succeeded in getting the fly-fighting committee of the American Civic Association interested in the Kansas campaign, and to that end prizes were offered in the three largest cities of the state for the best essays, written by pupils in the grammar grades, on the subject, "The House Fly as a Carrier of Disease," and was the means for distributing a considerable quantity of fly literature. It might be of interest to add that Edward Hatch, jr., chairman of the executive committee of the association, is beginning to have the Kansas idea of the Boy Scout movement taken up all over the country.

COMMITTEE ON COÖPERATION.

The last meeting of the Association of State and National Food and Dairy Departments, held at New Orleans, passed a resolution for the creation of a committee on coöperation with the federal government in the enforcement of the national and state food and drugs law. Your secretary was honored by being named chairman for this committee, and upon the invitation of Secretary Wilson of the Department of Agriculture the committee met in Washington on Tuesday, May 23, continuing in session the remainder of the week. The deliberations of the committee resulted in the adoption of the following resolutions:

1. "WHEREAS, Experience has demonstrated that close and cordial coöperation between the federal food and drug inspection branch laboratories, and the collaborating officials in the states where such laboratories are located, has resulted in inestimable benefit to both the laboratories and the collaborating state officials:

"We therefore recommend that those cordial relations be continued to the fullest extent in all such cases, and that the closest and most cordial collaboration be maintained, not only in the analytical departments, but among the inspection force as well.

2. "We recommend that the Secretary of Agriculture be requested to cause instructions to be issued to all food and drug inspectors operating under the national food and drugs act to the effect that whenever violations of the state food and drugs acts come under their observation they shall report the same to the commissioner or collaborating state official in that state.

"It is further recommended that all collaborating state officials in the several states be requested to transmit immediately to the Secretary of Agriculture information as to violations of the national law or information which may lead to the discovery of such violations, where such of-

ficial may for any reason be unable to handle such case satisfactorily or expeditiously.

3. "WHEREAS, Regulation 4 of circular No. 21 prescribes that: 'Unless otherwise directed by the Secretary of Agriculture, the methods of analysis employed shall be those prescribed by the association of official agricultural chemists and the United State Pharmacopeia,' your committee on coöperation requests that all collaborating chemists be supplied by the Secretary of Agriculture with the methods of analysis employed in the Bureau of Chemistry in the examination of foods and drugs, where methods have received the approval of the Secretary of Agriculture and are not those methods prescribed by the A. O. A. C. and the United States Pharmacopeia.

"We recommend that the Secretary of Agriculture be requested to send out to all collaborating officials such confidential information concerning matters of general interest affecting the enforcement of the national food and drugs act as may be of assistance to the collaborating officials in the performance of their duties.

"It is further recommended that the collaborating officials be requested to send to the Secretary of Agriculture, and to other collaborators in the several states, all new information of value and general interest pertaining to their official work and investigations.

4. "We recommend that the Secretary of Agriculture invite the various collaborating state officials to correspond with his department in all matters requiring information or advice, and urge upon them the desirability of interchanging ideas and information upon all matters pertaining to the enforcement of the national food and drugs act.

5. "We recommend that, where perishable food or drug products have entered into interstate commerce and are found or believed to be unfit for food or drug purposes, and there is a reasonable doubt as to the conditions of such product at the time of shipment or manufacture, full information concerning the case be referred to the state official in whose state the shipment originated as soon as the first steps looking to the condemnation of such product have been taken. This state official should immediately investigate the source of such product and the sanitary conditions under which it is manufactured or produced and immediately submit all information obtained in said investigation to the state or federal official referring the case.

6. "It is suggested by this committee that if any collaborating state official can place his inspection force at the service of the Secretary of Agriculture to aid in the enforcement of the national food and drugs act, this service be proffered for such use as the occasion may demand.

7. "WHEREAS, Many of the states which have efficient food laws and food control do not have laws preventing adulteration of drugs or controlling the great evil of drug substitution:

"Therefore, we recommend that this association pledge to the food commissioners in states which do not have efficient drug laws its support and assistance in their efforts to secure proper drug legislation;

"AND WHEREAS, We believe that concerted action will advance drug control throughout the country and render the sale of fraudulent and fake medicinal preparations increasingly difficult, if not impossible; we

"Recommend further that commissioners be urged to prepare circulars of confidential information concerning illegal drugs and medicinal preparations and send them to other state drug-control officials and to the federal authorities.

8. "WHEREAS, The collaboration of federal and state chemists has resulted to the mutual advantage of all concerned by bringing about greater efficiency, together with uniformity of methods; and

"WHEREAS, Since the bacteriological and microscopical examination

of food and drugs is coming to be of increasingly great importance in the detection of certain forms of adulteration and decomposition:

"We therefore recommend collaboration between state and federal bacteriologists and microscopists as being desirable for the same reasons that have made such collaboration of chemists both desirable and necessary.

9. "WHEREAS, In consideration of the vital importance and necessity for coöperation between the national and state food and drug control officials as herein set forth:

"We unanimously recommend to this association that a permanent standing committee on coöperation be appointed by the president of the association, such committee to consist of five members, and its duties to be to endeavor to secure coöperation in the enforcement of the national food and drugs act and the food and drugs acts of the several states, to aid in advancing coöperation between the federal and state food and drug control officials, and to promote coöperation among the state officials of the several states.

"It is further recommended that the terms of office of the members of said committee be respectively one, two, three, four and five years; that subsequently the term of office of each shall be for five years, and that the president of this association shall fill any vacancy in said committee, caused by death, resignation or otherwise, for the unexpired term.

"It is further recommended that the Secretary of Agriculture be requested to appoint one or more persons connected with the United States Department of Agriculture to meet and act with said committee on coöperation at all its meetings, and to represent the said department in the deliberations of said committee.

"It is further recommended that said committee be required to report at the annual meeting of this association the results of its efforts to accomplish such coöperation, and that said committee be empowered to take such steps as seem desirable in promoting such coöperation.

10. "WHEREAS, The meeting on coöperation held in May, 1911, in Washington, D. C., would have been impossible except for the courtesies and aid extended to the committee by the Secretary of Agriculture, in placing at its disposal all facilities necessary for carrying on its work;

"We recommend that the secretary of this association be authorized to express to him and to his able representative, Dr. F. L. Dunlap, the thanks of this association for the many courtesies extended to your committee on this occasion.

"Complete and full instructions have been sent to the collaborating officials in connection with their duties in the administration of the national food law. It has appeared, however, that certain of the directions as sent have not been sufficiently explanatory, and in order to make these points clearer to the collaborating officials it has seemed to the committee desirable to discuss more fully some of these steps. The committee wishes to express its thanks to Mr. W. P. Jones, of the Solicitor's Office of the U. S. Department of Agriculture, for the aid he has furnished them in working out the details of the explanations which follow in connection with this phase of the coöperative work.

"The collaborators are referred to the Manual of Instruction issued by the Department of Agriculture, wherein general information on this subject is given.

"Three things are necessary to successful prosecution of a case under section 2 of the federal law:

"First. The sample must have been shipped in interstate commerce.

"Second. The sample must be received by the analyst in the identical condition in which it was shipped from another state. (Sample must be an 'unbroken package.')

Third. The sample must have been adulterated or misbranded at the time it was shipped from another state.

"The gist of the offense is the shipment; that is, in general, the delivery within a state of an article of food or drug to a carrier for transportation into another state. The contents of the sample must be in the exact condition in which they were shipped, in order that the analyst or examiner may be able to testify to the composition of the article at the time it was shipped.

"The regulations adopted by the three secretaries wisely provide that only those state officials holding commissions from the Secretary of Agriculture, and their agents, shall collect samples on which to base prosecutions under the law. The commissions issued by the Secretary must be carefully preserved, so that they may be produced, if necessary, to show that samples were regularly collected. The commissioned state officials should issue similar commissions to their agents, which must likewise be preserved. What products shall be samples rests in the discretion of the commissioned state officials, subject to such requests as the Secretary of Agriculture may make from time to time. The commissioned state official shall instruct his agents what samples to collect, and only those samples can be used which are collected by agents within the authority conferred on them by the commissioned state official.

"A commissioned state official, or his agent, when collecting a sample within his state which has been received from another state, territory or the District of Columbia, should keep in mind and use the forms provided by the Secretary of Agriculture. For example, if Mr. Woods or his agent finds in the state of Maine adulterated foods shipped into the state from Illinois, he should procure a sample and take a receipt therefor on the Department of Agriculture form (Dealer's Receipt). At least three packages should be procured, when practicable, and in bulk goods enough to subdivide into three parts. He should obtain from the dealer records (invoices, etc.), showing the sale of the shipment of which the sample is a part, and transportation records (way bills, freight receipts, etc.), covering the transportation of the shipment from Illinois to Maine. The dealer's receipt should be signed by a person who can identify the sample with the records of sale and transportation, and who can testify that the sample delivered to the inspector was in the same condition as when received by the dealer. The records of sale and transportation may be originals or copies. Originals are preferable, but all records obtained should be initialed by the dealer, so that he may identify them later. The samples should be sealed and marked by the collector, using D. of A. seals and marks. He should also prepare a report of collection, using Department of Agriculture Inspector's Description of Sample Book, and Inspector's Report of Collection.

"The reports should be delivered to Mr. Woods with all the samples except one, which should be turned over to Mr. Bartlett, the chemist in Maine appointed by the Secretary of Agriculture as collaborating chemist in the Bureau of Chemistry. Mr. Bartlett should examine the sample promptly and report the results to Mr. Woods, using the Department of Agriculture Analytical Sheet and Chemist's Report. Mr. Woods should keep a record of the sample on Department of Agriculture Sample Index Card. If, in his opinion, Bartlett's report shows the sample to be adulterated or misbranded, Woods should send to Jones in Illinois reports of the inspector and analyst, one of the samples, and ask him to cite shipper for hearing. Woods should notify the Secretary of Agriculture of his action. Jones should cite the shipper for hearing at once, fixing a reasonable time, and, if requested, should turn the sample over to the shipper. Under Regulation 6, hearings are private and confined to questions of fact. The Department of Agriculture form, Appointment for Hearing, should be used and sent by registered mail. The return receipt card should be filed in the records of the case, to show delivery of the notice. Everything which transpires at the hearing should be taken down by a stenographer and a transcript made. If it is impracticable to furnish

a verbatim report of the hearing the commissioned state official should dictate a summary of the hearing and have it transcribed immediately after the close of the hearing. The hearing should be conducted in accordance with Regulation 5. For further information with respect to hearings the commissioned state official should consult Department of Agriculture Manual of Instructions, page 46. After the hearing Jones should send all the records received from Woods to the Secretary of Agriculture, together with the reports of the hearing. If it develops, however, that the shipper holds a guarantee under section 9 of the law, and the guarantor resides in Illinois, Jones should cite the guarantor for hearing also before him, and report both hearings to the Secretary of Agriculture. Jones should notify Woods when the hearings have been held, and also when he has referred the case to the Secretary of Agriculture.

"On receipt of the records by the Secretary of Agriculture they will be summarized by the Bureau of Chemistry and sent to the solicitor for recommendation whether prosecution shall be had. Woods and Jones will be notified of the Secretary's decision. If the case is sent to the Attorney-general for prosecution, Woods will be called on for a sample to be examined by the collaborating chemist in Illinois, to check Bartlett's results, and also to make available to the United States attorney in Illinois, where the case must be tried, an analyst with whom he may confer in the preparation of the case. The results of the check analysis will be reported by Jones to Woods and the Secretary of Agriculture. Both Woods and Jones should notify the Secretary of Agriculture of any pertinent facts in the case which may come to their notice at any time prior to its termination in court.

"Suppose, on the other hand, that Mr. Jones finds the manufacturers or jobbers in Illinois are shipping adulterated or misbranded foods and drugs into the state of Maine in violation of the federal laws. He should instruct his inspectors to obtain information, through the transportation companies, of the date of shipment and the names of consignees, and make a report to Mr. Woods, giving him the details with regard to the shipment, together with his reasons for believing that the articles shipped are adulterated or misbranded. With this report before him, Mr. Woods will be enabled to make a prompt collection of a sample, have it examined, and proceed to prepare a case for prosecution against the shippers, as above outlined.

"Or if in his opinion the circumstances warrant such action, Mr. Woods may ask the United States attorney for the district of Maine to make a seizure of the shipment. Prompt action is necessary to effect seizures of foods and drugs. Adulterated and misbranded foods are liable to seizure under the law as long as they remain in the original unbroken packages; that is to say, generally speaking, packages in which they are shipped in interstate commerce. Under a recent decision of the supreme court, it is immaterial whether adulterated or misbranded goods have been transferred out of the possession of the original consignee within the state. Proof is necessary, however, to show that the goods either are in the course of transportation from one state to another or have been transported from one state to another. In presenting proposed seizures to the United States attorney, Mr. Woods, therefore, should furnish him with evidence in the form of freight bills, waybills, express receipts, invoice, etc., when they are available, showing that the particular lot of goods have been transported in interstate commerce. If inspectors themselves witness the interstate transportation of goods, a statement to the effect to the United States attorney will take the place of records of interstate transportation. If Mr. Jones has furnished Mr. Woods with an analysis of a sample taken from the shipment, or from other shipments of the same goods made on or about the same time, and this analysis shows that the goods are adulterated and misbranded, the United States attorney may be asked to seize the goods on the strength

of this analysis. It is preferable, however, if there is time, that a sample should be obtained from the shipment after its arrival in the state of Maine, and there analyzed. The reason for this is, that to obtain a decree of condemnation or forfeiture it is necessary to show that goods are adulterated or misbranded at the time seizure is made. In the case of perishable goods, it is necessary that an examination should be made of samples on their arrival within the state, and it may very well happen that goods which were not adulterated at the time they left the state of Illinois may be adulterated when they arrive within the state of Maine. It is possible, also, that goods shipped from Illinois may be relabeled or branded after their arrival in the state of Maine, so that, although misbranded at the time of shipment, they may not be misbranded in the hands of the consignee. Mr. Woods should advise the Secretary of Agriculture and Mr. Jones promptly of any action he may take with respect to asking United States attorneys to make seizures of adulterated foods shipped from Illinois. The report should be in detail, showing the facts of interstate transportation, the analytical results, particulars in which the goods are alleged to be adulterated and misbranded, and the action taken by the United States attorney. If the United States attorney accepts his recommendation, Mr. Woods should obtain and send to the Secretary of Agriculture a copy of the libel filed, and should keep him advised of the progress of the suit. Mr. Woods should ask the United States attorney for permission to take samples from the seized goods for analysis; a sufficient number of samples should be procured to be representative of the shipment. These samples should be sealed, marked, and analyzed as soon as possible after they are obtained. Mr. Woods should advise the Secretary of Agriculture of the number of samples obtained and whether he desires to have any of the samples examined by chemists outside the state of Maine. In contested cases it is frequently important to have examinations of samples made by different analysts, and it will generally be found expedient to have the analysis made by the collaborating chemist in Maine, supplemented by analysis made either by the Bureau of Chemistry or by collaborating chemists in other states."

If the plans and work herein outlined shall be adopted by the National Association at their next meeting and formally approved by the government, which we have the assurance they will be, it would be, in my judgment, the most important movement in food and drug control that has ever been inaugurated. Hitherto there has been a lack of harmony and coöperation between the states and the government, and between the several states themselves. This plan would harmonize and strengthen the hands of every food commissioner as well as that of the federal government in the enforcement of both the state and national laws.

INSPECTION OF PRIVATE SCHOOLS.

Agreeable to the sentiment expressed in the former meeting, that there was just as good and perhaps greater need for the inspection of the private as for the state educational institutions, the president, at the suggestion of the secretary, appointed certain members of the Board, living closest to the schools designated, as a committee to visit and inspect such institution. The assignments as made were as follows:

COMMITTEES.

Sanitary Inspection of Private and Denominational Schools.

Atchison: St. Benedict's College, Midland College—Doctor Alexander and Professor Bailey.

Baldwin: Baker University—Doctors Coburn and Jarret.

Concordia: College of the Sisters of Bethany—Doctor Eddy.

Emporia: College of Emporia—Doctor Magee and Professor Hoad.

Eureka Lake: Odd Fellow's Home—Doctor Crumbine and Professor Hoad.

Hiawatha: Baptist College—Doctor Alexander.

Highland: Highland University—Doctor Alexander.

Holton: Campbell College—Doctor Reynolds.

Leavenworth: Sacred Heart—Doctor Coburn.

Lindsborg: Bethany College—Doctors Walker and Eddy.

Newton: Bethel College—Doctor Thompson.

Oswego: Missouri Valley College—Doctor Aldrich.

Ottawa: Ottawa University—Doctors Jarret and Coburn.

Sterling: Cooper College—Doctor Thompson.

St. Marys: St. Marys College—Doctor Alexander and Professor Bailey.

Topeka: Washburn—Doctor Crumbine and Professor Hoad. College of the Sisters of Bethany, Assumption School, St. Joseph's School, Boys' Industrial School—Doctors Lerrigo and Magee.

Wichita: Mt. Carmel Academy, Fairmount College, Friends College, Masonic Home—Doctor Crumbine and Professor Hoad.

Winfield: Southwestern College, St. John's College—Doctor Aldrich.

It is suggested that copies of these reports should be sent to the head of the institutions inspected, and in case of grave insanitary conditions existing that would seem to be a menace to the health of the students, that the Board should issue an order requiring such changes to be made as would seem to be necessary to remove such a menace.

HOTELS.

As indicated in a former report, the work in the inspection of hotels by county health officers has in many instances proven entirely ineffective in the enforcement of the law. It was thought best, therefore, to temporarily withdraw our food and drug inspectors from their usual work, in order that they might visit the counties in which the inspection of hotels had not been made or in which the law had been ineffectively enforced; accordingly, the following circular letter was issued to inspectors:

Circular Letter No. 42.

MAY 17, 1911.

"To Food and Drug Inspectors:

"Beginning the week of Monday, May 22, inspectors will devote their time, until further notice, to hotel and restaurant inspection. Beginning in the town in each county where is located the county health officer, get him and the local fire marshal to accompany you if possible, and then clean up the hotels and restaurants in that county. Where you find flagrant violations of the law, complaint should be filed with the county attorney. Orders left for clean-ups, changes or repairs should be certified back, upon compliance, to you by one of these officials or the town marshal.

"Where you are delayed in a town longer than it takes for hotel inspection, you should, of course, take up your regular inspection work, preference being given to meat markets, bakeries and flour mills, in the order named.

"Accompanying this letter is a list of counties assigned to you for this special work. Move fast, as we can not spend too much time on this work. Very truly yours. S. J. CRUMBINE, M. D., *Secretary.*

"P. S.—Certificates will not be issued on this special inspection by inspectors, unless accompanied by the order of the County Health Officer, who will make out report in the usual manner on the blanks furnished by this department."

This inspection has revealed the wisdom of detailing inspectors on this work, and has strengthened my former belief that the department should

have at least two high-class men whose entire time should be devoted to hotel inspection, and that work be taken out of the hands of the county health officers.

GENERAL.

Food and Drugs Law.

The work under the division of food and drugs for the past year has been carried on in the same vigorous fashion that has characterized that division of the work since its inception, having always in mind fairness and a square deal to all parties concerned.

Inspectors are endeavoring to enforce in a special manner the sanitary provisions of the law. There is no reason why cleanliness should not prevail in every Kansas establishment. It is to be expected, therefore, that a goodly number of the prosecutions which have been brought during the past year have been for violating the sanitary provisions of the law.

Of the prosecutions that have been brought since the publication of the last biennial report, which now covers a period of two years, there have been 35 for the adulteration of drugs; 139 for the adulteration of foods, and 71 for insanitary conditions where foods were produced or offered for sale. Two cases have been successfully brought for obstructing inspection.

Speaking generally, it is my belief that the conditions of the food and drug establishments are in most instances highly satisfactory. Of course, there are constantly recurring problems and much work to be accomplished yet in food and drug control, particularly the latter.

In this connection I desire to speak of one remaining evil that is so often practiced by druggists—that of substitution. In order that some educational work should be done along that line, I asked Professor Sayre, the drug analyst for the department, to lay the matter before the annual meeting of the State Pharmaceutical Association, which he kindly consented to do by submitting the following message, which I trust will meet with your approval:

"The druggists of the state are to be congratulated in that the standard for drugs and medicinal preparations is receiving more attention. Improvement in official preparations is more or less marked, and it is the hope of the department that every druggist in the state of Kansas will have on his dispensing shelves preparations which will uniformly respond to the official test. Perhaps many of you will recall that in a recent BULLETIN the following statement was made: 'We will match the drug and grocery stores of this state with any other state in the Union, in the same size town, as to sanitary conditions and quality of stock.' (November, 1910.)

"The State Board of Health is not only heartily in sympathy with every effort of the pharmacists to improve the standard and quality of drugs and pharmaceuticals, but from the above quotation in the BULLETIN it would seem that it is jealous of the standing of the Kansas pharmacists, and is proud of the progress that has been made in recent years in dissipating the odium which to a greater or less degree was associated with the name of the Kansas druggists.

"With this feeling, then, as a basis, it is the department's desire to bring before the attention of the pharmacists of the state one of the remaining evils—that of substitution. This is no new evil, or one that is practiced by the disreputable pharmacist alone, but, strangely enough, many of our best, most cultured and intelligent pharmacists have been taken up into the mount of "Just as Good," have been shown the kingdoms of profit in the valleys below, and have been swept away from the sane moorings of reputable pharmacy in the vicious practice of substitution.

"It is in a spirit of frankness and fairness, entirely devoid of animosity or ill will, that I want to announce that on and after this date evidence against any pharmacists that has been substituting in any particular,

especially in that of prescriptions, will be the grounds for a criminal prosecution in the courts. The day of the 'substituter' is past in Kansas.

"The responsibility rests upon the department to see to the enforcement of the law, and one of the specific things forbidden by the Kansas food and drugs law is that of substitution. We submit, therefore, in all fairness, whether or not the pharmacists of Kansas expect the Board of Health to waive or set aside the plain provision of the law which they are charged to enforce.

"The members of the pharmaceutical profession, as loyal citizens of the state, it is presumed will do all they can to support the state laws and hold up the hands of those into whose hands the responsibility of the administration of the law is placed, and the State Board of Health asks for your hearty coöperation in this matter."

I am advised that the association took active and advanced ground in the question of substitution, and I am glad to know that they have unequivocally denounced the practice and have indicated their willingness to assist the department in the enforcement of the law.

Standardization of Disinfectants.

There are a great many so-called disinfectants upon the market that make extravagant claims as to their potency. It is my belief that the division of foods and drugs should require the standardization of all disinfectants sold in the state, and that the labels on such preparations as claim to be disinfectants should make a definite statement as to the carbolic acid coefficient. The necessity for this must appeal to the members of the Board without argument, and I therefore recommend that the Committee on Food and Drug Standards be directed to investigate the matter fully and recommend to the Board some action, together with suggested standards, to report at the next quarterly meeting.

Weights and Measures Law.

Since the passage of the weights and measures law sixty-eight prosecutions have been successfully brought for the violation of the same. Thousands of weights and scales have been inspected and a great many condemnations made. One of the surprises of the work has been the large percentage of both weights and scales, including both avoirdupois and apothecaries', that were found to be beyond the limit of tolerance permitted under the law and the rules and regulations promulgated by the state sealer of weights and measures. For illustration, it has been found that about 35 per cent of the apothecaries' weights that have thus far been inspected have been condemned, and about 80 per cent of the old-fashioned iron avoirdupois weights have been found inaccurate, usually short of weight by reason of rust and in having the edges chipped. As indicated in a previous report, about 35 per cent of the large wagon scales were beyond the limit of tolerance.

In all fairness, it should be said that in most instances the error in the weights and scales were unknown by the dealer, as hitherto he has had no way of knowing as to whether or not they were correct. In a small number of instances there was clear evidence of intention to defraud, and in all such cases prosecutions were filed against the offenders.

Division of Water and Sewage.

The work under the division of water and sewage has grown to such an extent, as requested in a former meeting that an assistant engineer had to be secured. The engineer of the Board, Professor Hoad, will submit his annual report covering in detail his work in that division. The Secretary will be content, therefore, in simply saying that two of the most important tasks the State Board of Health has ever undertaken will come up for solution during the coming year, which have direct bearing upon the physical welfare of a large number of our citizens. I refer to the towns lying in the drainage areas of the Cottonwood and Neosho and Virdigris rivers, and the cities situated on the

Missouri river, all of which are being used as a source of domestic water supply for the cities situated thereon.

The domestic supply of almost every city in the state has been analyzed as to its wholesomeness and purity by the chemist of the State Water Survey, and suggestions for the betterment of the same have been made, and in many instances put into operation.

The value of the water and sewage work in relation to the life and health of the people of Kansas can not be overestimated.

Hotel Inspection.

Some 1200 of the approximately 1700 hotels have been inspected twice. About 1000 have been granted certificates, 80 have been closed because of insanitary, filthy conditions, or failure to comply with the law, and the balance are pending while undergoing repairs or arranging for compliance for the second inspection.

Vital Statistics Law.

For some time after the legislature adjourned it was thought impossible to put into operation the vital-statistics law, because of lack of funds appropriated for that purpose. The whole question was laid before the governor and the state auditor, and their permission finally secured to permit us to use the emergency fund for one of the clerks and the tuberculosis fund for another. After the salary of the state registrar is taken out of the amount specifically appropriated by the Legislature, it would leave \$700 for miscellaneous expenses, not enough to provide another clerk. It has therefore been arranged with the city clerks of the cities of the first class to provide a third clerk in the department, by turning back so much of the fees as are necessary for that purpose. This arrangement is done with the knowledge and consent of the governor and state auditor and with the consent of all the city clerks thus far interviewed. I trust that this arrangement for the use of the funds above mentioned and the arrangement with the city clerks will meet with your approval.

It is believed that the importance of the law as a sanitary measure and the value of the records from a legal and scientific standpoint are so great that the extraordinary methods herein adopted to make the law immediately effective are warranted.

The election of the state registrar and the adoption of the rules and regulations under the law will come before you under the head of new business.

Tuberculosis Exhibit.

Two years' work of our traveling tuberculosis exhibit is almost ended, and it is a source of great pleasure and gratification that the work has been most successful, and I believe the means of accomplishing great good in the dissemination of accurate and scientific information concerning the cause and prevention of this great scourge of humanity—tuberculosis.

Since the addition of the two moving-picture films, "The Fly Pest" and the dirty-milk story, "The Man Who Learned," Doctor Emley, the lecturer in charge, reports that there has been difficulty in securing halls large enough to take care of the crowds.

There have been, up to the present year, approximately one-quarter million of people who have seen the exhibit and heard the lectures. The exhibit has visited every county in the state at one or more places. Special effort has been made to secure the attendance of the students and teachers of the public schools, which effort has been generally successful, for the final solution of the control of most of our infectious diseases, particularly that of tuberculosis, must depend largely, if not chiefly, upon the dissemination of accurate information among the people, particularly the on-coming generations.

That board of health whose chief function is to attempt the control of epidemic diseases through quarantine and disinfection, whose office force

is chiefly engaged in the tabulation of vital statistics, and whose publications are cluttered with wearisome tables of the same, has yet to learn its true mission—that of education of the people in personal and public hygiene, which is the fundamental basis of successful preventive medicine as it relates to public health work.

Strangely enough, the dissemination of knowledge among the people in matters of personal and public hygiene has not kept pace with the general increase in and dissemination of knowledge along other lines; so that it is not at all uncommon to find highly educated people holding the most absurd and grotesque views on subjects concerning their own bodies, of the cause and prevention of disease, or the common principles underlying private and public sanitation.

Modern public health work must, therefore, concern itself with methods and plans whereby the people as a whole may be instructed, to the end that the work of boards of health in the suppression of preventable diseases may receive intelligent and systematic coöperation, and that cities and communities may not hesitate or delay to carry out such plans or public works as may prevent disease and which may be for the promotion of the general comfort and public welfare.

I regret to announce that Doctor Emley believes that he can not, in justice to himself and family, continue the work another year, as the legislature has provided for its continuance. I would, therefore, ask for an order from the Board to secure another lecturer, upon such terms as can be made to get a first-class man. It is my belief that the work of the exhibit was chiefly instrumental in securing from the legislature an appropriation for a State Tuberculosis Sanatorium.

Tuberculosis Notification Law.

It is a matter of regret and considerable concern that the provisions of the tuberculosis notification law have not yet been fully observed by the physicians of the state. It is thought that after the vital statistics law becomes fully operative we will be in a better position to discover what physicians are failing to comply with the law, through the death reports on tuberculosis that are filed through the department monthly. At all events, I believe that after two years time we should insist, through the courts if necessary, that this most beneficent law be literally enforced.

INFECTIOUS DISEASES.

Anterior Poliomyelitis.

The past year has been exceptionally free from grave epidemics of the infectious diseases, with the single exception of an epidemic of anterior poliomyelitis, which is the second year that this malignant infection has visited our state. Altogether there were 189 cases, affecting 47 counties, between the 1st of July and the 1st of December, 1910.

There have been two cases reported this year—one from Saline county and one from Riley county. It is certainly to be hoped that we will not have a repetition of the epidemic this year.

A study of the cases occurring in last year's epidemic is being made, and the results of the same will be published in a future issue of the BULLETIN.

Experiments with monkeys at the Rosedale Hospital will be continued this year if the opportunity is presented. It is also desired that a number of cases in the acute stage be taken to the hospital for study; and it is desired that the fullest facilities in the matter of study be given to those in charge, with the hope that our limited knowledge concerning the dissemination of the disease and its treatment may be greatly extended.

Rabies.

It is a serious fact that rabies in Kansas is rapidly on the increase. There has been scarcely a week for the past year but what from one to a half-dozen cases of bite of some person or persons by a supposedly mad-dog has been reported to the department. In addition to this, thousands

of dollars' worth of valuable live stock have been thus infected and destroyed. It is my belief that the time has come for the inauguration of a state-wide muzzling order for dogs, lasting for a period of at least sixty days. And it is, therefore, recommended that the Board petition the state sanitary live-stock commissioner to issue such an order. Under the law, it seems that the commissioner has the authority for such action, if in his judgment the disease becomes or threatens to become prevalent.

In accordance with instructions of the Board at its last quarterly meeting, arrangements have been made to provide the Pasteur treatment, as secured from the Public Health and Marine Hospital Service, for such of the state's indigent as can be properly treated at the State University Medical School.

In this connection I would also add that we have laid in a stock of antimeningitis serum, tetanus antitoxin, and typhoid and scarlet fever bacterins, information of which was published in the May BULLETIN. The physicians of the state have shown their appreciation of this work by already placing their orders for a number of doses of the various serums, antitoxins and bacterins mentioned.

It is of special interest to note that the antimeningitis serum seemed to have been instrumental in the recovery of a case of epidemic cerebrospinal meningitis, as the first case that came down in the family was fatal, the second case being in the condition in which it seemed to the attending physician to be almost hopeless; yet two injections of the Flexner serum resulted in prompt recovery of the case.

Railroad Camps.

Occasional complaints come to this department from various sources concerning the sanitary conditions of railroad and construction camps. Some time ago a painstaking investigation was made of a large camp at Erie, Kan., and a report made to the Board. In this case they were serving meals to the railroad employees as a part of their compensation, and therefore the quality and method of serving such food supplies clearly came within the provisions of the food and drug law. In the matter of railroad camps that are not thus being supplied with food as a part of the compensation, I am somewhat in doubt as to the Board's authority in the matter. It is recommended that the matter be discussed by the Board, and the secretary instructed as to what, if any, procedure in the way of investigation and bringing about better conditions in these camps can be done within the limits of our authority.

Summer School for Physicians and Health Officers.

This evening the chancellor opens in a formal way the first summer school for physicians and health officers ever held in Kansas. It seems to me that this marks an epoch, not only in the University Medical School, but in the sanitary organization of the state, in an effort to bring about a coördination and coöperation between the University Medical School and public health work of the state, and, incidentally, bring this great institution in vital and practical touch and usefulness with the physicians of the commonwealth.

On May 13 the following letter was sent to health officers:

"To County and Municipal Health Officers:

"MAY 13, 1911.

"The first annual summer school for health officers and physicians will be held at the University at Lawrence, under the joint auspices of the State Board of Health and Medical Department of the University, for one week beginning Monday, June 12. For detailed announcement and program see the May BULLETIN.

"Every health officer of the state is urged to be present, and the hope is entertained that nothing short of sickness in your immediate family will prevent your coming.

"It is suggested that the matter be laid before your board of health and that your expenses be allowed for this trip, yet your failure in this

particular should not permit you to deny yourself this brief time which will be spent with such pleasure and profit.

"In addition to the school work, the business of the State Association of Health Officers will be taken up, in which matters of mutual interest and importance will be discussed.

"Doctor, you owe it to yourself to take this little vacation, and you owe it to this department to assist us in making our first annual school for health officers an unqualified success.

"I would be glad if you would advise me between this time and the first of June if you expect to attend.

Fraternally yours,

S. J. CRUMBINE, *Secretary.*"

To-day marks the advent of three new members of the Board and three new conferees of the advisory board, and I am sure I am expressing the sentiments of the Board when I extend to these new members a most cordial welcome to join with us in carrying forward the work of the State Department of Health. I am sure that our relations will continue to be in the future, as they have in the past, both harmonious and interesting and mutually helpful, always keeping to the fore those altruistic principles which have been the guiding star of the true members of our profession, namely, the greatest good to and our best efforts in the promotion of the public welfare.

At the last annual meeting of the National Food and Dairy Departments, a resolution was adopted favoring the creation of a standards committee under the national law, which would be composed of state and federal food officials, state and federal chemists, and representatives of the great commercial interests. While this resolution has not yet become effective under the federal government, and indeed can not until Congress passes the necessary legislation to make it effective, yet Kansas, with her usual spirit of progressiveness, has put into practical effect the provisions of this resolution, and has the distinction of being the first state to appoint representatives of the commercial interests as conferees upon her advisory board; is it any wonder that at the recent conference held at Washington, every new question coming up for discussion was prefaced by the question, What is Kansas doing in that respect? I am sure that the counsel and advice of these gentlemen will be very helpful in the enforcement of the food and drugs act.

MINUTES OF THE ANNUAL MEETING OF THE
STATE BOARD OF HEALTH.

HELD IN TOPEKA ON JUNE 12, 1911.

The State Board of Health met in annual session in the office of the secretary at Topeka, on Monday, June 12, at one o'clock P. M.

Upon roll call all members of the Board were present except Dr. J. W. Jarrett; of the advisory board Dr. Greenfield and Mr. Deacon were present, and of the conferees, Mr. Kimball.

The first order of business was the election of officers for the ensuing year, which resulted as follows: President, Dr. B. J. Alexander, of Hiawatha, Kan.; Vice President, Mr. C. B. Welch, attorney of Coffeyville, Kan.

Upon motion the advisory board and the conferees were unanimously reelected, as follows: Dean F. O. Marvin of Lawrence, Prof. William C. Hoad of Lawrence, Prof. E. H. S. Bailey of Lawrence, Prof. J. T. Willard of Manhattan, Prof. L. E. Sayre of Lawrence, Dr. R. S. Magee of Topeka, Dr. Sarah E. Greenfield of Topeka, Mr. W. J. V. Deacon of Topeka; and the conferees of the Board, who are, Mr. J. A. Kimball of Salina, Mr. F. E. Evans of Wichita, and Mr. Fred Morns of Topeka.

The position of state registrar under Senate bill No. 90, Laws of 1911, was then passed upon, and upon the recommendation of the secretary Mr. W. J. V. Deacon was unanimously chosen as state registrar, vacating his present position as assistant chief food and drug inspector, whereupon the secretary recommended the election of Mr. Floyd Tilford, one of our present drug inspectors, to fill the position of assistant chief food and drug inspector, and he was accordingly unanimously elected.

Rules and regulations for the enforcement of Senate bill No. 90, Laws of 1911, were then presented, and after reading them and a discussion thereon they were unanimously adopted. These rules and regulations have been printed in pamphlet form and will be furnished to any one upon request.

MINUTES OF EXTRAORDINARY SESSION OF
STATE BOARD OF HEALTH.

HELD IN LAWRENCE, JUNE 12, 1911.

In accordance with the call of the president the State Board of Health met in extraordinary session at Snow Hall, at the University of Kansas, Lawrence, at 4.30 P. M., on June 12, 1911.

Upon roll call all of the members of the Board were present and all of the members of the advisory board except Professor Sayre and Professor Willard, and Mr. Evans and Mr. Morns of the conferees.

The minutes of the last quarterly meeting were then read, and upon motion were approved and ordered placed on file.

Following this the annual report of the secretary was read, whereupon a discussion of the same was entered into by the members of the Board, and the recommendations of the secretary taken up with the following results:

That the recommendation of the standardization of disinfectants be referred to the committee on food and drug standards, to make a report at the next quarterly meeting, in September.

The recommendation of the secretary that we be authorized to secure a lecturer for the tuberculosis exhibit in the place of Doctor Emley, who resigned, was approved.

That the recommendation to request the sanitary live-stock commissioner to declare a muzzling upon all dogs in the state of Kansas for a period of ninety days was unanimously approved.

After a discussion as to what authority the State Board of Health had in the matter of railroad camps that are not supplying food as a portion of their compensation, the attorney for the board advised that the matter be referred to the local boards of health to operate under the general nuisance law.

The matter of the operation of the vital statistics law and a consideration of the insufficient appropriations made by the legislature was then taken up, and the plan presented by the secretary was approved. The plan was as follows: That one clerk be secured from the emergency fund, that one be secured from the tuberculosis fund, and that the third be provided for by the city clerks of the cities of the first class, under such arrangements as will prove satisfactory to said clerks.

The special committee appointed at the last quarterly meeting to formulate and present a regulation providing for a minimum time limit on quarantine then made their report, and upon the request of the committee the committee was

continued, to make a final report at the next quarterly meeting. It was moved and unanimously carried that the minimum time limit for the quarantine of epidemic anterior poliomyelitis be four weeks and that the quarantine be absolute; and also that the house or place where such disease occurred should be thoroughly and effectively screened against flies.

The Board then adjourned for supper, to reconvene at nine o'clock P. M.

At eight o'clock Chancellor Strong of the University formally opened the first summer school for physicians and health officers ever conducted in Kansas. There were twenty-eight physicians present at this formal opening. Doctor Sudler followed with an address on "The relation of the school of medicine to public health work." After this, at nine P. M., the State Board of Health reconvened in extra session, whereupon the secretary presented the report of the special investigation on the so-called common or roller towel, which report was as follows:

INVESTIGATION OF THE PUBLIC TOWEL.

"On May 9 and 10 the hotels and other public places of Topeka, Burlingame and Emporia were visited for the purpose of making an investigation on the public towel.

"The results of this investigation are given in tabulated form below:

QUALITATIVE TEST FOR BACTERIA.

Towel.	Culture.	Time.	Stain.	Observations.*
1. Used	Blood serum....	48 hrs....	Grams....	Gram-bacillus.
2. Used	Blood serum....	48 hrs....	Grams....	Gram-bacillus. Gram-staphylococcus. Gram-staphylococcus. Staphylococcus aureus.
3. Used	Blood serum....	48 hrs....	Grams....	Small gram-staphylococcus. Small gram-bacillus. Staphylococcus albus.
4. Used	Pl. ag. plate....	48 hrs....	Grams....	Gram-diplococcus. Small gram-staphylococcus. Gram-bacillus.
5. Used	Pl. ag. plate....	48 hrs....	Grams....	Gram-staphylococcus. Gram-staphylococcus. Gram-bacillus. Small gram-bacillus.
6. Used	Pl. ag. plate....	48 hrs....	Grams....	Gram-diplococcus. Small gram-staphylococcus. Small gram-bacillus.
7. Used	Pl. ag. plate....	48 hrs....	Grams....	Small gram-staphylococcus. Gram-bacillus, spore-forming.
8. Fresh laundered..	Pl. ag. plate....	48 hrs....	Grams....	Gram-staphylococcus.

* Gram-, a gram negative stain; Gram+, a gram positive stain.

The blood serum cultures were obtained by rubbing a sterile platinum loop over the surface of the towel and then smearing the bacteria on the platinum loop over the surface of the blood serum culture.

In making the plate cultures, an emulsion was made of a small piece of towel in sterile water, and then the usual technique of making plate cultures was followed.

EXAMINATION OF THE CENTRIFUGED MATTER FROM THE TOWEL.

A piece of towel 5 cm. square was stirred around in water free from bacteria, and the water then centrifuged and the centrifuged matter examined under a microscope.

Towel.	Observations.
1. Used	Epithelial cells. Bacteria, motile.
2. Used	Epithelial cells, very numerous. Bacteria, motile.
3. Used	Epithelial cells, quite numerous. Bacteria. Starch grains.
4. Used	Epithelial cells. Bacteria, a small bacilli being very numerous.
5. Used	A few epithelial cells. Bacteria, motile and nonmotile.
6. Fresh laundered..	A very few epithelial cells.

EXPERIMENT ON GUINEA PIGS.

At the suggestion of Doctor Barber, an experiment was made on guinea pigs, which consisted of making an emulsion of a piece of towel in sterile-normal salt solution, and injecting this into the peritoneum of a guinea pig.

Towel.	Pig.	Wt.	Dose.	Time.	Results.
1. Used	1. Black face.....	425 gms.	2 cc.	5-12-9-10 A. M.	5/22, negative.
2. Used	2. White nose.....	425 gms.	1 cc.	5-12-9-10 A. M.	5/22, negative.
	3. White spots.....	184 gms.	1 cc.	5-12-9-10 A. M.	5/22, negative.
	4. Brown	182 gms.	1 cc.	5-12-9-10 A. M.	5/22, negative.
3. Used	5. Black face.....	255 gms.	1 cc.	5-12-9-10 A. M.	5/22, negative.
	6. Black, white.....	170 gms.	1 cc.	5-12-9-10 A. M.	5/22, negative.
	7. Small brown....	171 gms.	1 cc.	5-12-9-10 A. M.	5/22, negative.
4. Used	8. Small brown....	172 gms.	1 cc.	5-12-9-10 A. M.	5/22, negative.
5. Used	9. Light brown....	396 gms.	2 cc.	5-12-9-10 A. M.	5/22, negative.
6. Fresh laundered..	10. White	537 gms.	2 cc.	5-12-9-10 A. M.	5/22, negative.
	11. Brown	170 gms.	1 cc.	5-12-9-10 A. M.	5/22, negative.
	12. Brown	169 gms.	1 cc.	5-12-9-10 A. M.	5/22, negative.

During the time of this experiment up to May 22, not one of the pigs showed any illness.

Guinea pig No. 9 was inoculated with 2 cc. of an emulsion made from a towel which was estimated to have 1,331,200 bacteria to the square centimeter.

On May 18 and 19 the hotels and other public places of Ottawa, Olathe and Kansas City, Kan., were visited for the purpose of making a further investigation of the public towel.

The results of this investigation are given in tabulated form below:

Towel.	Culture.	Time.	Stain.	Observations.*
1. Used	Blood serum....	48 hrs....	Grams....	Staphylococcus aureus. Gram-staphylococcus.
2. Used	Blood serum....	48 hrs....	Grams....	Staphylococcus aureus. Gram-bacillus. Large gram-staphylococcus.
3. Used	Blood serum....	48 hrs....	Grams....	Gram-staphylococcus. Gram-staphylococcus. Gram-bacillus.
4. Used	Blood serum....	48 hrs....	Grams....	Staphylococcus aureus. Staphylococcus albus. Gram-staphylococcus.
5. Used	Blood serum....	48 hrs....	Grams....	Gram-staphylococcus. Gram-diplococcus. Small gram-bacillus.
6. Used	Blood serum....	48 hrs....	Grams....	Gram-staphylococcus. Yeasts cells.
7. Fresh laundered..	Blood serum....	48 hrs....	Grams....	Gram-staphylococcus.

* Gram-, a gram negative stain; a gram- positive stain.

QUANTITATIVE ESTIMATION OF BACTERIA TO THE SQUARE CENTIMETER.

Towel.	Cultures.	Time.	Results.
1. Very dirty.....	Pl. ag. plate....	48 hrs....	1,331,200 bacteria to the square centimeter.
2. Used once or twice....	Pl. ag. plate....	48 hrs....	5200 bacteria to the square centimeter.
3. Fresh laundered.....	Pl. ag. plate....	48 hrs....	No bacteria.

"In making this test, a piece of towel one square centimeter was transferred with sterile precautions to 100 cc. of sterile water. This was thoroughly shaken up, then two drops transferred to a plate culture, using a sterile 1 cc. pipette equivalent to 33 drops of water.

"The culture was kept at a temperature of 38 degrees Centigrade for 48 hrs., after which the colonies were counted, and from this the number of bacteria to the square centimeter was estimated.

PRESUMPTIVE TEST FOR BACILLUS COLI COMMUNIS.

Towel.	Time.	Lactose bile.
1. Used	48 hrs.....	No change.
2. Used	48 hrs.....	No change.
3. Used	48 hrs.....	No change.
4. Used	48 hrs.....	No change.
5. Used, dirty.....	48 hrs.....	Gas formation, about 25 per cent.
6. Used	48 hrs.....	Gas formation, about 25 per cent.
7. Fresh laundered.....	48 hrs.....	No change.
8. Fresh laundered.....	48 hrs.....	No change.

"This test was made by transferring a small piece of the towel, with sterile precautions, to the tube containing the lactose bile. The formation of gas in two of the tubes is a presumptive test for colon bacillus.

SUMMARY OF RESULTS.

"The experiment on guinea pigs shows that there were no bacteria on the towels used capable of setting up an acute infection to the guinea pigs. However, this test does not prove much, for it is well known that most bacteria pathogenic to man are destroyed by exposure to light and drying. The greater danger therefore to man would be in his using the towel immediately after some one else had used it. The above experiment on guinea pigs does not exclude the possibility of them becoming infected with tuberculosis later on.

"The finding of numerous epithelial cells in the centrifuged matter from the towel shows that the possibilities of catching contagious diseases, especially those of the skin, by use of the public towel are very great.

"The positive indication of *Bacillus coli* being present on two of the towels shows that the towels must have been contaminated with fecal matter, and hence is a danger signal and an indication that it may have been accompanied by the typhoid bacillus.

"The work of this investigation was carried on in the bacteriological laboratory of the Medical School at the University of Kansas, Lawrence, Kan.

PAUL H. CARL, *Bacteriologist.*

Upon motion the following resolution was unanimously adopted and ordered published in the official state paper:

ABOLITION OF THE COMMON TOWEL.

Ruling by State Board of Health.

That the use of the common roller towel in hotels, railway trains, public and private schools is prohibited from and after September 1, 1911.

No person or corporation shall place, furnish or keep in place, in any hotel, railway train, railway station, public or private school, any

towel for the common public use, and no person or corporation in charge or control of any such place shall permit in such place the use of the common towel.

The term "common towel" as used herein shall be construed to mean roller towels and towels intended or available for common use by more than one person without being laundered after such use.

REPORT OF DOCTOR GREENFIELD, STATE BACTERIOLOGIST.

"The following are the examinations which have been made by me since July 1, 1910, until the present time, June 12, 1911:

Total number of specimens examined, 2374.

Specimens examined for tuberculosis, 1531.

Specimens examined for diphtheria, 443.

Specimens of blood tested for the Widal reaction, 219.

Samples of water tested for the *Coli communis*, 137.

Specimens examined for the gonococcus, 18.

The brains of 13 dogs, 5 squirrels, 2 hogs, 1 calf and 1 rabbit were examined for the Negri bodies, the organisms which are supposed to be the etiological factor in rabies.

One specimen was examined for cerebrospinal meningitis.

Two rabbits were inoculated with the brains of dogs.

Of the 1531 specimens of sputum examined, 372 showed tubercle bacilli.

Of the 443 specimens of suspected diphtheria examined, 140 showed the Klebs-Loeffer bacillus.

Of the 219 specimens of blood tested for the Widal reaction, 92 were positive.

Of the 137 samples of water tested for the bacillus *Coli communis*, 62 were positive.

Of the 18 specimens from suspected cases of gonorrhoea, 7 were positive.

"The negri bodies were found in six cases; three or four cases were suspicious, but diagnosis not fully established. One of the rabbits inoculated died with typical symptoms of rabies on the 23d day after inoculation. The other rabbit, which was inoculated with the brain of a dog that had but few symptoms of rabies, is still alive and well, 18 days after inoculation.

Respectfully submitted.

SARA E. GREENFIELD."

REPORT OF J. T. WILLARD, FOOD ANALYST,

On Ketchups and Similar Preparations.

"A considerable number of ketchups and similar preparations were sent us for examination. The criteria for judgment upon such articles are not at all well established. Of course benzoate of soda under the rulings of the federal authorities may be used to the extent of one-tenth of one per cent. The fact that otherwise waste material is used in making these products is well known. It is alleged that the use of benzoate of soda for the preservation of stock until it can be worked up facilitates the use of material that is more or less moldy or otherwise decomposed.

"In forming a judgment upon these articles, therefore, the federal authorities have made use of the microscope, and counts of organisms, or evidences of organisms, present. The Bureau of Chemistry has issued Circular No. 68, by B. J. Howard, chief of the Microchemical Laboratory, the subject being "Tomato Ketchup Under the Microscope." In the course of the discussion the author expresses the view that it is feasible to keep the number of yeasts and spores in one-sixtieth of a cubic millimeter below twenty-five. Home-made ketchup contains practically none. Laboratory experiments are alleged to show that when the number of yeasts in raw pulp reaches thirty to thirty-five in one-sixtieth cubic millimeter the spoilage may frequently be detected by an expert by odor or taste.

"In respect to bacteria the opinion is expressed that the bacterial content of the final product should be within twenty-five million per cubic

centimeter. Pulp previous to concentration should not exceed about half this number.

"In the examination of the samples sent us we are under the highest obligation to Mr. L. D. Bushnell, of the Department of Bacteriology, Kansas State Agricultural College, without whose assistance and instruction it would not have been possible to do the work, and indeed much of the work was done by him.

"Thirty-seven samples have been reported upon, and without going into detail at this time in respect to them it may be stated that because of excess of bacteria or excess of yeasts and spores only four of the number would conform to the requirements suggested in the circular referred to above.

"Whether or not the Board should characterize as illegal the sale of articles of this quality is a debatable question. It is probably true that the best way of dealing with problems of this kind is by the maintenance of a close system of inspection of manufacturing establishments. This should be done under such an organization that inspection by one authority, either state or federal, should suffice to meet the needs of all other states in respect to a given establishment."

REPORT OF PROFESSOR E. H. S. BAILEY.

Report of Work Finished and in Progress in the Food Laboratory to June 1, 1911.

"About thirty vanilla extracts practically completed but not yet reported on.

"Ten samples of pickles being examined for alum and preservatives and nearing completion.

"Twenty-four samples of canned tomatoes being studied to see if water has been added to the tomatoes in the process of canning. These nearly finished.

"An investigation being made of the manufacture of terpeneless extract of lemon. This subject came up on account of the report in the March and April BULLETIN, showing about thirty commercial extracts below standard, and many of them very far below. The work is not finished, but enough has been found out to indicate that many producers of this product have not at all understood its production. Work will be continued, with the object of finding the proper method of preparation of this article.

"An investigation of the addition of starch to compressed yeast in order to determine if it is an adulterant under the Kansas law. The work has been done by a student in food analysis as a thesis for the master's degree. The result is inconclusive, and points to further work on problems of exact analytical methods. There is a good deal to indicate, however, that water is or may be a greater adulterant than starch, and that until a good deal more is known about the subject no action in regard to standards should be taken.

"An investigation involving in part the analysis of about thirty vinegars, made in the food laboratory from Kansas apples, for the gathering of data on known pure products. Vinegar is one of the most largely manipulated food products, and is often very difficult to judge. The work is being done by a student in food analysis as a thesis for the master's degree, and is not completed.

"A study of twenty honeys has been made by a student from Washburn, chiefly in the food laboratory at the University of Kansas, but also some at Washburn. The results were offered as a thesis for the A. B. degree in Washburn. The honeys were taken upon the Kansas markets by food inspectors, and represented chiefly honeys shipped in from outside the state, but also some native production. The results showed that all but two are above suspicion, and these two will be further examined.

"There are about thirty-five miscellaneous samples in process of examination or waiting to be examined, several of which need special study,

as they are new, understandardized products for which methods have not been worked out.

"A year ago a study of the deterioration of baking powder with age was started by analyzing about forty brands and putting away samples for reanalysis when they should be, respectively, one, two and three years old. The second analysis should have been done by March, 1911, but could not be undertaken on account of the number of routine samples sent in by inspectors. It is possible that the work can be continued this fall.

"In February, 1910, twenty-two samples of first, second and third molasses were kindly secured by Sprague, Warner & Co., of Chicago, and presented to the food laboratory for study for data on such products. Due to pressure of routine work, these have not been analyzed to date, and the information they would have afforded has not been available in judging other products.

"In many ways it is constantly seen that investigations of greater or less length are needed in addition to the routine examination of foods sent in by the inspectors. This work is absolutely essential if the routine work is to be done in an intelligent and just manner, as new problems are constantly arising and new products appearing on the market. Unless this phase of the work is duly recognized and provided for, the routine state work can not reach its highest possible efficiency.

"It should be pointed out in this connection that unless a stenographer-clerk can be provided for the food laboratory for at least half time for the coming year, that the writer's time must be increasingly taken up with clerical work of many kinds, and less and less of his time left available for chemical work. Present conditions constitute an uneconomical division of labor.

"For the rest, the work completed during the last quarter is to be found in the State Board of Health BULLETIN.

Respectfully,

H. LOUIS JACKSON,

In charge of Food Laboratory."

REPORT.

"Since March 1 the water analysis laboratory has examined 100 samples of water, 56 of which are present city supplies; the remainder are principally proposed city supplies; however, some 8 or 10 are private supplies, sent in at the request of county health officials.

"The water analysis laboratory is endeavoring to make a complete survey of all of the city supplies in the state, preparatory to making a request to the State Board of Health for a special order of the Board to be that each city supply have an analysis made once a year for the next four years. These four analyses will be made at different times of the year, so that some of the characteristic variations of the supplies may be recorded, both for the mineral and organic materials in the water. This data should be in the hands of the state sanitary engineer, and we believe it would be exceptionally valuable when locating new supplies or improving old ones.

THE CITY SUPPLIES EXAMINED.

No.	City.
4305.....	Fredonia. City supply.
4309.....	Belleville. City supply.
4310.....	Garnett. Proposed city supply.
4311.....	Osage City. Proposed city supply.
4312.....	Herington. City supply.
4313.....	Larned. City supply.
4314.....	Erie. City supply.
4315.....	Minneapolis. City supply.
4316.....	Pleasanton. City supply.
4320.....	Kingman. City supply.
4319.....	Baxter Springs. City supply.

- 4321.....Goodland. City supply.
 4322.....Pratt. City supply.
 4324.....Norton. City supply.
 4325.....Coldwater. Proposed city supply.
 4326.....Lindsborg. City supply.
 4327.....Abilene. City supply.
 4328.....Ellinwood. City supply.
 4329.....St. Marys. City supply.
 4331.....Havensville. City supply.
 4332.....Garden City. City supply.
 4333.....Waverly. City supply.
 4334.....Waverly. City supply.
 4335.....Waverly. City supply.
 4340.....Conway Springs. City supply.
 4341.....Clifton. City supply.
 4342.....Luray. Proposed city supply.
 4347.....Meade. City supply.
 4348.....Logan. City supply.
 4349.....Augusta. Proposed city supply.
 4350.....Augusta. Proposed city supply.
 4351.....Augusta. Proposed city supply.
 4352.....Plainville. City supply.
 4358.....Greenleaf. City supply.
 4360.....Lawrence. City supply.
 4363.....Lebanon. City supply.
 4366.....Hill City. Proposed city supply.
 4370.....Herington. Proposed city supply.
 4371.....Herington. Proposed city supply.
 4373.....Herington. Proposed city supply.
 4374.....Burden. Proposed city supply.
 4378.....Halstead. City supply.
 4380.....Peru. City supply.
 4381.....Council Grove. City supply.
 4383.....Burden. Proposed city supply.
 4385.....Council Grove. City supply.
 4388.....Mankato. City supply.
 4391.....Kiowa. City supply.
 4392.....Almena. City supply.
 4398.....Medicine Lodge. City supply.
 4394.....Downs. City supply.
 4395.....Council Grove. City supply.
 4396.....Chetopa. City supply.
 4398.....Marquette. City supply.
 4400.....Sedan. City supply.

May 31, 1911.

C. C. YOUNG, *Chemist State Water Survey.*

Following the analysts' report was the annual report of the state engineer, which is as follows:

ANNUAL REPORT OF THE ENGINEER OF THE STATE BOARD OF HEALTH.

The work of the engineering office for the past year has been approximately the same as that of the year preceding, though the volume of work attended to has been somewhat greater. The addition of Mr. Veatch to the office on the first of September has made it possible to meet the added demands made upon us.

WATER AND SEWAGE PURIFICATION PLANTS.

We have tried this year to put into effect a plan that has long been in mind looking toward a certain degree of control by the State Board of Health over the operation and maintenance of water and sewage purifica-

tion plants. There are forty-four water supplies in the state using water from surface sources. Of these, twenty-five supplies are purified in some degree before being delivered into the mains. Many of these purification plants are capable of furnishing better water than is secured from them, provided they are better operated. We have met almost uniformly a desire on the part of the city officials for some plan of coöperation by which the city could be furnished systematically with expert advice with relation to the operation of its purification plant. It is evident that it would be very desirable indeed, from the standpoint of the Board, if this relationship were such that systematic and regular reports concerning the operation of all these plants could be provided for in connection with a system of inspection by the Board.

The same condition, in general, exists with respect to sewage purification plants, of which the number in the state is at present between forty and fifty. About a dozen more are now under contract or will be built within the next year. Our experience with sewage disposal plants indicates that there is great need for a readjustment of our ideas concerning them. Practically all our Kansas plants are equipped with automatic devices, whereby the proper distribution of the sewage is maintained and the regularly intermittent dosing of the filters is secured. The tendency of the city officials charged with the care of the sewage system is to neglect entirely to look after the disposal plant until something goes wrong. Even when it is thus called to their attention, its needs oftentimes receive only scant courtesy. A sewage disposal plant, unlike a water purification or an electric lighting plant, brings in no revenue, and consequently whatever attention it receives is oftentimes grudgingly given, and then only from the pressure of dire necessity.

It has been our wish to make systematic inspections of all water and sewage purification plants in the state as frequently as there should be need for it, and to advise with the city officials regarding their operation and maintenance. The waterworks and sewage superintendents would be instructed in the manipulation of rapid methods of making certain easy and approximate tests of the character of the work being done by their respective plants, and more complete analyses and investigations would be made when necessary by the water survey and bacteriological laboratory of the University. A system of monthly reports to be made to the Board would give us many extremely useful data and would help to insure for the plants the continuous care and attention they need. A plan for all this has been pretty well worked out, but we have so far found it impossible to put it into effect on account of lack of time. We are expecting to begin this work, however, during the coming summer.

DROUTH CONDITIONS.

The drouth of the past twenty-four or twenty-five months has been one of the most severe and widespread in the history of the state. It has affected the sanitary situation in two important respects. In the first place the long-continued dry weather has resulted in the drying up of many of the smaller streams and in greatly decreasing the flow of all streams of the state. This extreme low-water condition has in many places accentuated the nuisance resulting from the discharge of sewage and industrial wastes into the streams, in a number of instances resulting in a very serious public nuisance. This condition has called attention sharply to the need for a careful investigation of the various streams of the state that receive industrial wastes, with a view to limiting these waters to an amount that the stream can properly assimilate. In the second place, the long-continued drouth has resulted in such a lowering of the general ground-water level as to seriously affect many city water supplies, particularly those from shallow wells. There are probably fifty cities in the state that have felt this condition severely, while perhaps a third of that number have faced a serious shortage in their supply. A few supplies have failed entirely, leaving the cities depending upon

them without water. This is a condition serious in the extreme, and should call attention to the importance of having a very large margin of safety in a municipal water supply.

SANITARY SURVEY OF NEOSHO AND VERDIGRIS RIVERS.

Perhaps the most important piece of work during the year was the sanitary survey of the drainage areas of the Neosho and Verdigris rivers. A preliminary report of this investigation was made to the Board at its March meeting, at which time a special committee was appointed by the Board to endeavor to carry into effect the recommendations made by this report. This preliminary report was published in the May BULLETIN of the department. The engineering department is continuing to gather information concerning this problem, however, as it is realized that this is not a matter that can be settled all at once, but that the proposed plan of adjustment will require perhaps years for its complete realization.

SEWERAGE AND WATERWORKS CONSTRUCTION IN THE STATE.

During the early spring the activity of the cities of the state looking toward the construction of sewerage and waterworks systems was somewhat lessened, in view of the approaching city election. After the elections the activity in this direction increased greatly, as not only was the deferred work taken up again, but in a large number of the smaller cities the question of waterworks or sewers was an election issue and was voted on favorably. This is particularly true with respect to the cities in the northwestern part of the state.

SEWERAGE DATA AND REPORTS.

During the past few months the information and data relating to sewerage and sewage disposal plants in the state has been worked over and put into more systematic form. Many of the records of city sewage disposal systems on file in the office of the Board were very incomplete, and these have been amended and brought up to date.

DETAILED STATEMENTS OF WATER-SUPPLY AND SEWERAGE WORK.

Following are brief statements of the routine work of the engineering department, with reference to municipal water supply and sewerage, and the investigation of cases of stream pollution during the past year:

Kansas City.

WATER PURIFICATION PLANT.—The new water purification plant for Kansas City is now nearing completion. This plant consists of elaborate settling basins, wherein the sediment of the Missouri river water is largely removed with the aid of a chemical coagulant, followed by a system of rapid sand filters. The whole plant has been very carefully designed and is thoroughly modern in character.

Topeka.

SEWER EXTENSION AND CHANGES.—The construction of several sewer extensions and new districts has been authorized during the year. Also, during November and December consideration was given to a change in the outlet of the main sewer of district 29, from the Kaw river to the revised channel of Ward's creek, this change being asked for by drainage district making improvements at this point. This change was approved on condition that the drainage district keep the channel of the creek clear of brush and other obstructions between the new sewer outlet and the river, and that the district assume responsibility for any local nuisance that might be created in this part of the channel by reason of the discharge of sewage into it.

Coffeyville.

WATER SUPPLY.—During the summer of last year the city of Coffeyville continued its search for a ground-water supply in the Verdigris river bottoms, and came to the conclusion that it would be impossible

to economically develop a sufficient supply of water from wells or filter galleries to meet the future needs of the city. The question of an improved water supply was then dropped for the time being, but lately has been revived. The present plan is to build a thoroughly modern and efficient filtration plant for the purification of the Verdigris river water, and otherwise to improve and strengthen the water-supply system. This plan is now under consideration and will likely be realized in the near future.

POLLUTION OF VERDIGRIS RIVER.—Early in November, at the request of Dr. E. C. Wickersham, the county health officer of Montgomery county, an investigation of the Verdigris river at Coffeyville was made. As a result of this investigation, a report was made to Doctor Wickersham, reciting that the existing offensive condition of the pool in the river at the southern edge of the city was an unusual condition occasioned by the great decrease in the flow of the stream; that to cure the evil at once by arbitrary means was manifestly impossible, and that even to prevent its recurrence in the future, under similar conditions of drouth on the drainage area of the river, might scarcely be worth the cost; that the present condition, while offensive to the senses and doubtless in some degree also prejudicial to health, was a transient condition only, and would pass with the first flushing out of the river pool; and, finally, that it would be better to put up with the nuisance during the present trying period rather than to force several important industries to suspend operations.

Hutchinson.

SEWAGE DISPOSAL.—The matter of the pollution of Cow creek by sewage from Hutchinson was investigated last summer, and was reported to the Board at its September meeting. At that time, also, several members of the Board personally inspected the creek for a short distance. As a result, the city of Hutchinson was placed under order by the Board to provide suitable means for the disposal of its sewage by January 1, 1912, the means to be approved by your engineer. During May, your secretary and engineer spent a day in the city in conference with Mayor Vincent, Commissioner Graybill, and City Engineer McLane, on the sewage disposal situation. So far no definite plans have been submitted, but the city is at present engaged in working them out.

Parsons.

SEWAGE DISPOSAL.—I am glad to be able to report that the plans for the purification of the sewage of the city of Parsons have been finally worked out and agreed upon, and that the city is now actively pushing the construction work. The movement to purify the sewage of the city and thus eliminate the nuisance in Big and Little Labette creeks near town was begun about two years ago, as a result of an investigation of the condition of these creeks by your engineer. At first tentative plans were worked out for a purification plant for the east side district alone. It was recommended to the city, however, that before accepting this method, and thus committing the city for all time to three or more separate disposal plants, a careful investigation should be made to see if all the sewage could not be carried to a point near the junction of the two creeks, about a mile and a half southeast of the city limits, and there purified in a single large disposal plant. A careful survey by the city engineer showed this scheme to be possible, and new plans were accordingly drawn for a large sewer to bring all the sewage to this point and for a disposal plant. This plant is to have a capacity of 2,000,000 gallons of sewage per day, and is to consist of septic tanks and contact filters, with an auxiliary pumping equipment to permit the plant to be operated during high-water periods in the creek. This plan involves the abandonment of the present south side septic tank, which was originally poorly designed and is now badly overworked.

Upon representations made by the city relative to the very large cost

of the proposed improvement, and showing that the creek below the location of the proposed plant traverses a wooded and farming country for many miles, with no residences and few roads near it, it was agreed that the city should at present build the outfall sewer, the four septic tank units, and the pumping plant, and for a time should discharge the septic tank effluent into the creek; but that at any time after two years, whenever the Board of Health should determine that the discharge of the partially purified sewage into the creek had become prejudicial to the public health, the city should complete the plant by the construction of the contact filters. Also, that the sludge bed for the septic tank need not be built until it should become necessary to clean out the tank. The realization of this plan will result in the elimination of one of the worst nuisances in the state.

Lawrence.

TYPHOID FEVER.—Early in October your secretary and engineer, in company with the local health officer, investigated what has been reported in the newspapers as a typhoid fever epidemic in the western part of Lawrence. We found the situation was being adequately handled by the local authorities, and nothing beyond a preliminary investigation was attempted. This proved to be not an epidemic, but three or four cases that had been imported by laborers, together with two or possibly three cases of secondary infection. Two students and one member of the faculty of the University also had the disease at the same time, having brought it with them from outside of the city. The local health officials took active charge of the situation, with the result that no new cases developed.

Independence.

POLLUTION OF ROCK CREEK.—Many bitter complaints regarding the foul condition of Rock creek, in Montgomery county, during August, and that the sewage from a part of the city of Independence and wastes from an oil refinery and a mineral-rubber plant were being discharged into the creek in such a manner and under such conditions as to be prejudicial to the public health, were reported to the Board at its December meeting, and an order to the city and each of the manufacturing companies was issued, looking toward the future protection of the creek from gross pollution.

WEST SIDE DISPOSAL PLANT.—On a number of occasions during the summer and fall of 1910 visits of inspection were made to the disposal plant of the west side sewer system. This plant consists of three septic tank units and eight contact filter beds. The effluent of the plant flows into Rock creek, at the southwest corner of the city, and complaint had been made to the Board alleging the existence of bad odors from both the creek and the plant. At that time the plant had been in operation only a few months. Upon investigation it was found that, owing to several openings into the sewer that had been made by plumbers and a manufacturing company, a very large amount of rain water from the surface run-off had found its way into the sewer during rain-storms. This strong flow of muddy water had tended not only to fill the septic tank with silt, but had flushed the lighter sludge already deposited in the tank out over the surface of the contact filters. Thus both the tanks and the filters had become badly sludged up. In an effort to clean the sludge beds the septic tank effluent had been turned directly into the creek for a number of days, resulting in the gross pollution of the stream.

It was recommended to the city engineer, Mr. A. D. Stivers, who had charge of the plant, that he first clean out the septic tanks, taking one compartment at a time; then that he cut out of service one group of four filter beds, allow them to drain and aerate thoroughly, and clean the stone by screening; then that this group be put back into service and the second group be cleaned in like manner. City Engineer Stivers suggested a flushing out of the channel of the stream by a strong flow of water from

the city mains, and this was sanctioned, with the additional recommendation that a narrow and deep channel be dug to connect the various pools, and thus facilitate the work.

The location of this purification plant is unfortunate, owing to the proximity of a number of residences, and there is the greatest need of keeping the premises in a thoroughly sanitary and attractive condition.

Fort Scott.

DISPOSAL OF WASTES FROM SYRUP FACTORY.—In October, in response to complaints of a serious nuisance resulting from the discharge of wastes from the plant of the Fort Scott Syrup and Manufacturing Company into a dry watercourse at the edge of town, a preliminary examination of the locality was made by your secretary and engineer. This was followed by a careful investigation of the whole situation by Mr. Veatch, with the result that a recommendation was made to the Board looking toward the laying of a sewer to the Marmaton river in which to carry the manufacturing wastes.

Arkansas City.

PROPOSED NEW WATER SUPPLY.—During the summer and fall of 1910 Arkansas City was again short of water. The long-continued dry weather had not only decreased the yield of the present sources of supply, but it had also tended to increase the consumption. Unfortunately, also, the city has been operating its water plant largely under a flat rate system of selling water, with the result that the per capita water consumption for house purposes has been considerably above the average of other cities of the same size. As a result of all these factors, it had seemed necessary on a number of occasions to supplement the normal supply of ground-water by the addition of Arkansas river water from the power canal that flows past the pumping plant. This river water, when so used, was partially purified in an emergency filter, but not to an extent sufficient to insure its wholesomeness. This method of reinforcing the regular supply was looked upon with disfavor by the citizens themselves, and in August it was discontinued.

At this time the supply of ground-water was so short that even with strict enforcement of an order against lawn sprinkling it was impossible to deliver water above the first stories of business buildings on some of the main streets.

During the fall the city officials had investigations made and plans prepared for the development of a new supply of water by means of a filter gallery built in a shallow deposit of sand and gravel along the Arkansas river, and for extensive additions to the pumping equipment and distribution system. Your engineer on a number of occasions met with the city officials and with representatives of the commercial organizations, as well as with the designing engineers employed by the city, and kept closely in touch with what was seen to be an important but extremely difficult situation. The final outcome was that at an election in November the proposition to vote bonds for the improvement was defeated.

Newton.

SEWERAGE AND SEWAGE DISPOSAL.—During the present year the plan inaugurated two years ago to give the city of Newton an efficient and comprehensive system of sewerage and a single plant has been finally realized. The disposal plant is located on Sand creek, at a point far below town, and at a considerable distance from any residences, present or prospective.

Several visits have been made to the plant during the year, and suggestions and recommendations have been made to the city officials regarding the operation and maintenance of the plant.

Wellington.

EMERGENCY WATER SUPPLY.—The protracted drouth, together with the greatly increased consumption due to the growth of the city, resulted last summer in a failure of the wells supplying the city of Wellington with water to meet the demands made upon them. Resort was had to the old-time supply of impounded water in the Slate creek reservoir, and a considerable part of the total city supply was taken from this source during the summer. To meet the emergency a plan for the temporary use of a large well to be sunk into a gravel bed near the edge of town was approved.

Cherryvale.

NEW WATER SUPPLY.—The drouth of the summer of 1910 resulted in the complete failure of the impounding reservoir supplying Cherryvale with water. For several months this city was entirely without a supply, except for such small quantities as could be secured from pools in near-by creeks and pumped into the city mains through temporary lines of pipe. Late in the fall, bonds to the extent of \$105,000 were authorized at a city election, for the purpose of securing a new supply from the Verdigris river. The plans for this work were at once drawn up and a contract for the pumping station and six-mile supply conduit was let, and the construction of this part of the system has been carried to completion. It is the expectation as soon as this is finished to begin to pump water from the river directly into the city distribution system without waiting for the completion of the filter plant.

Upon formal inquiry from the city asking whether or not the city would be permitted to omit the filtration plant from the proposed supply system and use the money thus saved in other directions, the city officials were advised that such omission would not be sanctioned and that a recommendation to omit this part of the system would not be made by the engineering department.

Rosedale.

SEWERAGE.—A number of meetings have been held with the mayor and council and other officials of Rosedale, with a view to working out a general plan for the sewerage of the city. The need for deciding upon some general plan at an early date was brought about by the preparation of plans by the Board of Public Works of Kansas City, Mo., for the diversion of Turkey creek through the Argentine ridge and for the completion of the sewer system of the O. K. creek drainage area. The consideration of other questions at the same time by the citizens of Rosedale, notably that of a possible union with Kansas City, Kan., has made it seem advisable to defer decisive action upon the sewerage problems; and now it appears as if the matter has again been indefinitely postponed. There is the greatest possible need for the sewerage of this city. It is now by far the largest city in the state without a sewer system.

Garden City.

SEWERAGE.—In December a visit was made to Garden City at the request of the mayor and council, to advise concerning the installation of a sewerage system. A careful examination of the city was made, and the conditions along the water front below the city with reference to the location of the sewer outlet were examined. Following this visit the mayor and council had preliminary plans drawn up, but up to the present time no further action has been taken. There is the greatest need for sewers in Garden City, and a very general demand for them. At the present time, Rosedale and Garden City are the largest cities in the state without sewerage facilities.

IMPROVED WATER SUPPLY.—The question of a soft water supply for Garden City from deep wells has been again brought to the fore by some of the citizens of the town and has been freely discussed. Comparative

analyses have been made for the city officials, and reports have been drawn up showing the relative values of the hard and soft waters of the region. The city has wished to defer action looking toward a better supply until the sewerage system has been secured, however, and it is expected that as soon as the sewers are built the new water supply will be developed.

Herington.

SEWERAGE.—The past year has witnessed the completion of a comprehensive and well-planned sewerage system for the city of Herington. The system includes a septic tank installation in three units, located about a half mile south of the city limits. This system has been completed within the past month.

NEW WATER SUPPLY.—The supply of soft water from a shallow well and infiltration gallery, built over a year ago, has proved to be inadequate to meet the growing needs of the city, and it has become necessary to develop an additional supply. There is a considerable number of large springs within the city limits of Herington, probably a dozen of these having a dry-weather yield of from 25 to 200 gallons per minute each. The water from these springs is only moderately hard and would make an acceptable supply were it not for the fact that the city itself is built all around them. These springs are fed by extensive systems of fissures in the broken limestone strata of the region and apparently gather their supply from a large area. The limestone lies near the surface of the ground, and this, together with the fact that it is badly broken and fissured, makes it easy for organic pollution on the surface of the ground to be carried directly to the springs. Since the area surrounding the springs is more or less occupied by human habitations, the contamination of the water with sewage is practically inevitable. We have at different times made three tests for *Coli communis* in two of these springs, and in each case have demonstrated the presence of sewage pollution.

In view of this, in May of the present year we declined to approve the use of one of these springs as a source of additional water supply. There is a proposition now before the city to vote bonds for the purpose of developing a supply from two springs about three miles west of town, and an election for this purpose has been called.

Holton.

SEWERAGE.—The new sewerage system of the city of Holton has been slowly progressing toward completion and will be ready for use in about thirty days. The system as planned was very comprehensive, completely covering the entire city. About two-thirds of this has been built under the first contract, and it is expected to extend the system into the outlying districts as needed.

The system includes a sewage purification plant consisting of septic tanks and contact filters of broken stone. This plant is located beyond the railroad tracks northeast of town, and is about a half mile beyond the city limits.

Olathe.

WATER PURIFICATION.—Several visits have been made to this city and considerable correspondence has been carried on relating to the reinforcement and especially to the purification of the present city water supply. Last fall the matter got as far along as the discussion and adoption of preliminary plans for a system of settling basins and filters, but up to the present time no contracts have been let. It is expected that this problem will be taken up vigorously during the coming year.

SEWAGE PURIFICATION.—The sewage from the entire city is at present discharged into a small watercourse just at the city limits. This little stream is normally dry except immediately following rains, and the nuisance created along its course by the city sewage is offensive in the extreme. During the past two years the desirability of making some satis-

factory disposition of its sewage has been brought to the city's attention on a number of occasions, though, so far, no tangible results have been secured. It is hoped that the city will not permit this nuisance long to continue.

Anthony.

INCREASED WATER SUPPLY.—During the drouth of last fall it became necessary to reinforce by some means the water supply of the city of Anthony, and plans were approved for a new group of wells located in the valley of Bluff creek, about a mile above the present plant. The construction of this new station was hurried through to completion, and an additional supply from this source has been in successful operation since late last fall.

Humboldt.

SEWAGE.—Plans for a comprehensive sewerage system for Humboldt were approved last fall. The contract for the work was not let until this spring, however, but the system is now under construction. The system will include a septic tank plant, by which the sewage will be partially purified before being discharged into the Neosho river.

The location and plans of this septic tank have been fixed with the idea of adding contact filters or sand filters a little later, whenever the increase in the volume of sewage or the condition of the river should render such addition necessary. The completed disposal plant will be at such an elevation as to be above the reach of the floods in the river.

Osage City.

SEWERAGE.—During last fall and winter a system of sewerage for Osage City was constructed. This system includes a disposal plant consisting of septic tanks and contact filters of broken stone, by which the sewage will be brought to a condition of non-putrescibility before being discharged into Salt creek.

WATERWORKS.—Last summer the city finally entered upon the long-deferred construction of a city waterworks system, the plans for which had been approved earlier. This system includes a large impounding reservoir on the south fork of Salt creek, at a point about a mile south of town, and a purification plant, including settling basins, filters and clear water well. This plant was practically completed last fall, but some minor defects in the filter system have still to be corrected. When this is done this plant will be one of the best of its kind in this part of the country.

Burlington.

SEWERAGE.—During June and July of 1910 the plans and specifications for a comprehensive sewerage system for the city of Burlington were received and approved, and an application from the city was filed for a permit to discharge sewage into the Neosho river after partial purification in septic tanks. The system has been built during the months of the past spring and is now nearly ready for service.

The present construction includes a pumping plant, to be used during floods in the river for the purpose of delivering the effluent from the septic tank into the river. It is expected that broken stone or sand filters will be added at some time in the future, whenever their use is deemed necessary, and that this pumping plant will then be used continuously to deliver the effluent from the septic tanks to the filters.

NEW WATER SUPPLY.—During April and May of this year plans have been developed for what promises to be an excellent supply of ground water from a gravel deposit on the west bank of the Neosho, just above the city limits. A number of borings have been made by the city waterworks superintendent, and plans have been drawn and provisionally approved for the development of a new supply by means of large wells. It is expected that this will replace the present Neosho river supply.

Garnett.

SEWERAGE.—During last summer plans and specifications were approved for two sewerage systems for the two topographical divisions of the city of Garnett, and early this spring contracts were let for the construction of the south side or larger of the two systems. Each system includes a disposal plant consisting of septic tanks and broken stone contact filters, the effluent from each plant being discharged into a dry watercourse.

Several visits have been made to the city and considerable correspondence entered into in relation to the sewerage problem. The prospect now seems fair for the early realization of the long-deferred plans for the complete sewerage of the town.

WATER SUPPLY.—In July, 1910, official complaint was made to the Board regarding the character of the city supply, and a thorough investigation was made of the conditions surrounding the impounding of this supply, the care of the lake, and the purification of the water previous to its delivery into the mains.

It was found that, owing to the dry weather, the water in the lake was low, and that a luxuriant growth of pond weeds, mostly *potamogeton*, had been permitted to develop around the shallow margin. Moreover, some of the oily waste from the engine room had been allowed to flow into the lake, from which it was drawn into the intake and delivered to the filters, thereby producing an oil film over the sand grains and making it difficult to properly clean the filters. In addition, the surroundings of the water plant were unkempt and unsightly.

As a result of this investigation, an order was recommended, which was issued by the secretary, directing the city officials to clear all vegetation from the lake and to clean up around the premises and to put the filters into good working order again. Also to provide for the proper disposition of the wastes from the plant, and to take such other action as might be necessary to preserve the purity of the water.

Caldwell.

ADDITIONAL WATER SUPPLY.—In August, 1910, plans were approved for a large receiving well to be built as an addition to the present water supply plant. This new well is to constitute a part of an additional water supply plant, and is to be reinforced by the addition of tubular wells near by, as the demand for them arises.

It is expected that a sufficient quantity of water will be developed from ground-water sources in the neighborhood to supply the entire needs of the city, thus making it unnecessary to draw upon the waters of Bluff creek.

Sabetha.

SEWERAGE.—During July final plans were received and approved for two sewerage systems for the two topographical divisions of the city, each system including a disposal plant consisting of septic tanks and broken stone contact filters. The contract for both systems was let later in the summer and the construction work was completed by winter.

At the earnest solicitation of the mayor and council, the relocation of one of the disposal plants was sanctioned at a point much nearer town than was originally contemplated. This change seems to the city officials to be necessary on account of some unexpected right-of-way difficulties.

Lyons.

SEWERAGE.—During the winter plans for a sewerage system for the city of Lyons were received, and were approved after certain minor modifications. This system is to include a pumping plant by which the entire flow of sewage is to be raised by means of automatic sewage lifts to the level of the disposal plant, which is to be located south of the city limits on ground sloping toward a small branch of Cow creek. The com-

pressed air for operating the sewage lifts is to come from the pumping station of the city waterworks. The disposal plant is to consist of septic tanks and contact filters of broken stone, as the effluent will be discharged into a small watercourse which is normally dry during a part of the year.

No application for permit has been received from the city and no action has been taken looking toward the immediate construction of the system.

Pleasanton.

SEWERAGE.—In August plans were received and approved for a complete sewerage system for the city of Pleasanton, including a purification plant consisting of septic tanks and broken stone contact filters. It was the expectation that contracts for the construction of this system would be awarded early this spring, but up to the present time no such action has been taken.

Russell.

WATERWORKS.—About eighteen months ago, plans were received and approved for a waterworks system for the city of Russell, including an impounding reservoir on a small stream southeast of the city and filtration at that point. Later the city expressed a wish to have the purification plant located in town, and in August, 1910, modified plans involving this desired change were received and approved. Construction work on the basis of the revised plans was begun during the summer and was completed during the spring of 1911.

There is every reason to believe that the new supply will be thoroughly acceptable and satisfactory from every standpoint. The drainage area of the impounding reservoir is a sparsely settled farming community. The reservoir itself is quite large, and the length of the storage period will be great. During the construction of the dam, a very strong flow of underground water was encountered in the sand and gravel overlying the rock, and this underground stream will be intercepted and brought to the surface by the dam. In addition, the filtration plant is well designed and should be effective in removing whatever trace of impurities there may be in the water from the lake.

Peabody.

ADDITIONAL WATER SUPPLY.—In November plans were received and approved for an additional well for the reinforcement of the present city water supply.

Smith Center.

WATER SUPPLY.—During the latter part of July, 1910, a visit was made to Smith Center for the purpose of looking over the water-supply situation with the mayor and council and county health officer. On account of the long-continued dry weather the supply had become inadequate in quantity and deteriorated in quality. At this time a general plan was approved looking toward the development of an additional supply by the construction of a filtration gallery across the water-bearing stratum of the little watercourse into which the former well was sunk. After a delay of several months, plans for this addition were perfected and were submitted for approval, and the construction work is now well under way.

Altoona.

WATERWORKS.—Last summer plans were drawn up for a new waterworks system for the city of Altoona, and in August a visit was made to the city to look over the ground concerning several different sources of supply. In addition, several conferences were held with the engineers designing the plant, in regard to its location, protection from floods, and the like. The proposition has received a temporary set-back, but it is the expectation that the matter will be revived shortly.

Augusta.

NEW WATER SUPPLY.—The drouth of the past year has resulted in the almost complete failure of the wells supplying the city of Augusta with water, and the city officials have been hard put to it to keep water in the city mains for fire protection purposes. As a means of accomplishing this latter purpose a temporary well was dug which has yielded a small amount of water, which, though quite unsuitable for domestic purposes, has served to limit the fire hazard. Immediately following the spring election, the new mayor and council took up actively the problem of developing a new water supply. A visit was made to the city early in May, and after a most thorough investigation advice was given that the best way of solving the problem was to take a supply from the Walnut river and purify it by means of settling basins and filters. This plan was adopted, and the city is now constructing such a plant, under the guidance of its engineers. On account of the fact that this was an emergency matter, the city is building the plant by day labor, and is having plans prepared and approved as the work progresses, the general scheme having been sanctioned at the start.

Baldwin.

SEWERAGE.—During the past year the two sewer systems of the city have been constructed. Each of these systems is provided with a sewage disposal plant consisting of septic tanks and contact filters of broken stone, since the small creeks into which the effluents are to be discharged are dry for a part of the year.

The completion of these sewerage systems, following upon the construction of the water plant last year, places the city of Baldwin among the best-improved small cities of the state, from a sanitary standpoint.

Hanover.

NEW WATER SUPPLY.—Late last fall the city of Hanover began operations looking toward the abandonment of the former city well on the bank of the Blue river, and the construction of a new well at a distance of about a quarter of a mile from the river at a point where the supply would be entirely composed of the normal ground water of the valley, and where the operation of the plant would not be interfered with by floods in the river. In connection with this, it was proposed to set out trees and otherwise to beautify the grounds around the new well and pumping station, thus improving the appearance of the city plant and enhancing the reputation of the supply. The plans for this work were approved during the winter and the new plant is now in operation.

Onaga.

NEW WATERWORKS PLANT.—In July, 1910, an investigation was made of the proposed location of a large well to supply a new city waterworks system. The location which it was desired to use was condemned on account of an insanitary environment and because of the great difficulty that would be met in preserving the wholesomeness of the water at this point. Another location was recommended, and test holes were bored and a satisfactory supply developed at this new point. Later, plans for the waterworks plant were examined and approved. This work is now under construction.

Nickerson.

SEWERAGE.—During the summer of 1910 plans were approved for a sewerage system for the city of Nickerson. It was desired to build only a sewer to serve the high school and a few other buildings near by, but since this would require a long pipe line to the river it was strongly recommended to the mayor that the city should have plans drawn for a comprehensive system of sewers sufficient to serve the entire city for the indefinite future; then the main sewer and one or two laterals might be built at present, leaving the remainder of the system to be built after

the city had secured a public water supply and the construction of a general sewerage system should be demanded. This plan was followed out.

To provide for the flushing of the sewer lateral, a large flush tank was built on the schoolhouse grounds, to be supplied with water by a windmill and driven well equipment. Thus at a small expense the sewer can be flushed at frequent intervals, which will not only prevent deposits in the lateral, but will also minimize trouble from the same cause in the mile and a half of sewer main between the town and the river.

State Imbecile Asylum at Winfield.

SEWAGE DISPOSAL PLANT.—There have been many complaints in the past regarding the discharge of sewage from the state imbecile asylum west of the city of Winfield into Elm creek. This condition was investigated in November, 1910, at the request of the Board of Control of the State Charitable Institutions, and a tentative plan for taking care of the sewage from this institution was suggested and an approximate estimate of cost was made. In harmony with this, the Board of Control asked for and received from the legislature an appropriation to construct the sewage disposal plant recommended. It is the expectation that this will be built during the coming summer.

Miscellaneous.

MATTERS RELATED TO WATER SUPPLY.—In addition to the foregoing, visits have been made and local situations have been looked over, or conferences have been held, or investigations have been made and reports written, or plans and specifications have been examined, in connection with the public water supplies of Coffeyville, Cawker City, Lawrence, Scandia, Emporia, Jamestown, Chanute, Syracuse, Wellington, Wa Keeney, Dodge City, Wilson, Marysville, Sharon Springs, Neodesha, Burden, Yates Center, Logan, Hoisington, Waterville, Marion, Hill City, Seneca, La Cygne, Blue Rapids, Mound Ridge, Stafford, Mulvane, Frankfort, Oakley, Downs, Luray, Baldwin, Coldwater, Ellis, Mound City, Waverly, and Sylvan Grove.

SEWERAGE AND SEWAGE DISPOSAL AND STREAM POLLUTION.—Similarly, investigations and reports have been made or advice furnished with reference to sewage disposal or stream pollution or to city sewerage in the case of each of the following-named cities: Hutchinson, Hiawatha, Lawrence, Yates Center, Emporia, Lindsborg, Newton, Washington, Cherryvale, Osborne, Horton, Ellis, Dodge City, Oskaloosa, McPherson, Tonganoxi, Columbus, Syracuse, Larned, Mulvane, Grabham, and a number of schools and other public institutions.

Respectfully submitted. W. C. HOAD, *Engineer.*

The secretary then read a letter from Dr. S. C. Emley, who presented his resignation, which is as follows:

LAWRENCE, KAN., June 5, 1911.

To the Board of Health, Topeka, Kan.:

DEAR SIRS—It is with much regret that circumstances render it necessary for me to give up my part of the great work the Board is doing for the people of this state. The work of the last year has been very congenial in the association and satisfactory in results.

I wish to express my appreciation of the consideration shown me by the members of the Board, collectively and individually, the wise guidance of Doctor Crumline and the prompt and efficient cooperation of Mr. Deacon, through whose help and influence the State Exhibit has been brought to the appreciative attention of more than a quarter of a million people, with credit to your Board and with some benefit, at least, to the people.

Very truly yours, S. C. EMLEY.

Two communications were then read, which were referred to the committee on food and drugs standards, for a report at the next quarterly meeting. One was from the Kansas Carlot Egg Shippers' Association, presenting the following resolution:

WHEREAS, it is detrimental to the interest of egg shippers and consumers that cold-storage eggs are sold as fresh eggs, both by wholesalers and retailers over this state, be it therefore,

Resolved, that the secretary of this Association communicate with Dr. S. J. Crumbine, secretary of the State Board of Health, urging the State Board of Health to take measures to eliminate this practice in this state.

In referring this letter to the committee on standards of foods and drugs, it is recommended that said committee prepare a rule which would require that all storage eggs should be properly labeled, declaring the fact that they were storage eggs.

The other communication was concerning street vendors of foods and drinks, as to what requirements, if any, the Board would insist should be made in order that the sanitary provisions of the food and drug law should be complied with. In referring this communication to the standards committee no recommendation was made.

The reports of the special committees appointed to inspect certain private schools of the state were presented without reading, and the secretary instructed to abstract these reports for presentation at the next quarterly meeting, and that copies of the same should be furnished to the heads of all of the institutions thus inspected.

A communication was then presented from President Waters of the Kansas State Agricultural College, inviting the Board to hold its next quarterly meeting at that institution. Upon motion the invitation was accepted and the secretary authorized to so inform President Waters.

The following accounts were audited and allowed:

Dr. C. E. Coburn	\$14.69
Dr. B. J. Alexander	17.18
Dr. O. D. Walker	18.34
Dr. M. F. Jarrett	18.85
Dr. V. C. Eddy	31.74
Dr. C. H. Lerrigo	6.58
Dr. C. B. Reynolds	13.68
Mr. Chas. D. Welch	21.90
Dr. H. L. Aldrich	23.13
Dr. J. A. Kimball	9.13
Dr. S. E. Greenfield	1.08

No further business appearing, the Board adjourned.

SECRETARY'S REPORT.

THE FIRST AND SECOND CONSOLIDATED QUARTERLY MEETING OF THE STATE BOARD OF HEALTH.

HELD AT MANHATTAN, KAN., OCTOBER 20, 21, 1911.

Mr. President and Members of the State Board of Health:

On the day following the annual meeting of the State Board of Health, namely, on Tuesday, June 13, 1911, the first summer school for physicians and health officers was formally opened, and the work began in the laboratories of the School of Medicine in Snow Hall, the school continuing throughout the week with increasing interest and attendance. Thirty-eight physicians were registered, five of whom were not health officers. The program as outlined in the advertising was carried out in full, and it was the unanimous opinion of all who took part in the program, and of those who attended the school, that the session was a success and should be continued annually hereafter.

RABIES.

In accordance with the action of the State Board of Health taken at the annual meeting concerning the muzzling of dogs throughout the state for the prevention of rabies, I communicated the Board's request to Mr. J. H. Mercer, state sanitary live-stock commissioner, and received the following reply:

TOPEKA, June 22, 1911.

"Dr. S. J. Crumbine, Statehouse, Topeka, Kan.:

"DEAR SIR—On arriving in the office this date, I find your letter of the 19th inst., advising me of the action of the State Board of Health on June 12, with reference to the quarantining of the dogs of the state.

"I wish to advise that I consider this impractical, for the reason that it would be very expensive to this department to maintain a state-wide quarantine, and also would be of considerable expense to the different counties in carrying out a quarantine provision of this nature.

"I think the handling and controlling of infected dogs of communities can be more thoroughly taken care of by local quarantines, the same as we handle outbreaks of contagious diseases among other live stock in the state.

"I wish to assure you that I will take up with any community the advisability of quarantining either township or county, as the conditions might demand, wherever I have notice that rabies exists. If you will supply me with the information as to where rabies exists at the present time I will take charge of same at once.

Very respectfully, J. H. MERCER."

Subsequently Mr. Mercer was advised of all locations where rabies in animals existed and where people were bitten, and in several counties, I understand, the commissioner promulgated and established muzzling orders.

Upon arrangement with Professor Wm. K. Trimble, of the University Medical Hospital at Rosedale, plans were devised whereby the indigent patients were treated who had been bitten by supposedly rabid dogs, the Pasteur treatment as provided by the U. S. Public Health and Marine Hospital Service being utilized for that purpose. Since these arrangements were made five patients have thus been treated.

ROLLER TOWEL.

As early as possible after the annual meeting publication was made in the official state paper of the order of the Board prohibiting the use of the common or roller towel in hotels, railway trains, railway stations and public and private schools on and after September 1, 1911. Notice was sent by registered mail to all the railroads doing business in this state, and assurance of prompt compliance on the date indicated was received from most of the railroads. Circular letters were also sent to the hotels in the state the names and addresses of which were available. Notice was given to State Superintendent Fairchild, with request that he, through the county superintendents, give notice to the various school boards of the state. Accordingly, on June 23, Superintendent Fairchild issued the following circular letter:

Circular No. 241-F.

"TO COUNTY SUPERINTENDENTS: "TOPEKA, June 23, 1911.
"My Dear County Superintendent—At the request of Secretary Crumbine I am sending herewith a recent order relative to the use of towels in hotels, public and private schools, etc. This order is in full effect at this time. As occasion offers kindly advise school boards and others interested.
"Be it Ruled by the State Board of Health.
 "That the use of the common or roller towel in hotels, railway trains, railway stations, public and private schools is prohibited from and after September 1, 1911.
 "No person or corporation shall place, furnish or keep in place in any hotel, railway train, railway station, public or private school, any towel for the common use, and no person or corporation shall permit in such place the use of the common towel.
 "The term "common towel" as used herein shall be construed to mean roller towels and towels intended or available for common use by more than one person without being laundered after each such use.
 Very truly yours, E. T. FAIRCHILD,
State Supt. Pub. Instruction.'"

MEETINGS ATTENDED.

On June 20 your secretary attended the meeting of the National Association for the Study and Prevention of Tuberculosis, at Denver, at which a most profitable day was spent. The two most interesting subjects that were discussed, in my judgment, were the relation of bovine tuberculosis, to human tuberculosis, and the sociological study of tuberculosis in six Pennsylvania cities. The latter subject has developed certain plans that I desire to speak of later in this report.

On June 23 and 24 I attended the Annual Conference of the Surgeon-general with the State and Territorial Boards of Health at San Francisco. The conference was well attended by the central and western states and by probably half of the health officers of the eastern states. Visits to quarantine station and emigrant island, with an inspection of the methods of the government in the handling of the great emigrant problem of the country, were exceedingly interesting. Upon our return to the city from these places we were taken to the plague laboratories, which occupy an entire block, enclosed by a concrete wall, in the western part of the city, where a most remarkable work is being done by the state of California and the city of San Francisco in conjunction with the federal government. For more than four years this work has been going on in the examination of from 1200 to 1500 rats and squirrels daily, in order not only to rid the community of these rodents but to find those that are infected. There is an effort now being made to completely surround the cities of Berkeley, Oakland and San Francisco with what is known as a "Squirrel-free zone," to be not less than ten miles in width.

A considerable number of squirrels that have been examined showed plague infection, and during the present year three cases of plague have occurred in the country districts of California, due to infection from the ground squirrel, the last case having occurred in San Joaquin county, September 18.

On June 30 and July 1 the National Conference of State and Provincial Boards of Health of North America was held at Los Angeles in conjunction with the meeting of the American Medical Association. Your secretary, who was chairman of the committee on publicity and board of health work, made a report of the methods utilized in Kansas, which report was ordered to be printed in the proceedings of the Association.

VITAL STATISTICS.

In accordance with the instructions of the State Board of Health, the law known as the vital statistics law was put into actual operation in August, and reports for the half of August and the first week in September indicate that the law is being reasonably well enforced, and in a more satisfactory manner than was anticipated. Much valuable data has already been secured, both from a sanitary and legal standpoint, and it is believed that with the coming months and years the utility of this division of the board of health work will grow in importance and value.

FOODS AND DRUGS.

The division of foods and drugs, under the assistant chief food and drug inspector, Mr. Tilford, is doing a good work, and reports that sanitary conditions of places where foods and drugs are prepared and sold are, in a general way, highly satisfactory throughout the state. A number of prosecutions have been made for keeping insanitary places, particularly in the case of meat markets and slaughterhouses, and several prosecutions have been made against dealers selling or offering for sale eggs that were unfit for food.

The reports of the large jobbers in eggs are to the effect that the general condition of Kansas eggs during the summer, notwithstanding the unusual season and the great heat, has been greatly improved over that of former years. This satisfactory condition is chiefly the result of the candling order of the Board, on which eggs are bought on a "loss off" basis, and partly as a result of educational work among the farmers in which they are taught to market their eggs more frequently in the warm weather.

The following circular was recently issued to the large jobbers, commission men and dealers in Kansas, which is self-explanatory:

"TOPEKA, KAN., October 9, 1911.

"To Jobbers and Dealers of Kansas:

"The season of the year has arrived when it may be expected that green oranges will be offered on the markets. Competition between the Florida and California growers to first supply the trade has led to the practice of cutting the oranges green, shipping to distributing points where they are put in warm rooms and steamed, which turns them a golden or ripe color, when they are offered for sale to the local dealers and through them to the unsuspecting public. Such processed oranges are unfit for food, as they often create acute stomach or bowel disturbances which sometimes are of a serious character. The flavor is poor and the pulp fiber soon becomes woody and dry. The department believes the sale of such products is prohibited under the Kansas food and drugs law and will contest the sale or offering of such for sale in this state.

"Your attention is also invited to the practice of coloring and polishing nuts, especially pecan nuts, which seems to be for the purpose of 'hiding inferiority' by giving the windfalls and unsound nuts the same color as the sound, full nuts, making them 'appear better than they really are,'

and deceiving the purchaser thereby. The department is of the belief that if nuts were polished by receiving a thin coat of paraffin without color it might not be objectionable, as such treatment seals the pores of the shell and therefore lengthens the life of the nut, but the coloring of nuts is only for fraudulent purposes. Recent investigations have shown that poisonous colors have in some instances been used, all of which emphasizes the necessity for prohibiting the further sale of colored nuts in this state; you are, therefore, advised that the sale of colored nuts is illegal.

"The season for ciders and fruit juices, both natural and imitation, is upon us, and your attention is invited to the standards for such products:

"*Diluted Fruit Juices.* A diluted fruit juice, such as lemonade and orangeade, is the expressed juice of the fruit corresponding to the name, together with potable water and cane sugar, without the addition of any coloring matter or flavor.

"*Imitation Diluted Fruit Juices.* An imitation diluted fruit juice is an uncolored solution, consisting of potable water, cane sugar, and of flavor and acidulous ingredients corresponding to the fruit imitated."

"Dealers will be held to strict account from this time on for violation of the above standards in the sale of this class of products.

Very truly yours,
S. J. CRUMBINE,
Chief Food and Drug Inspector."

STANDARDS AND RULES.

The committee on standards and rules have met and will submit their recommendations to the Board as a committee.

Recently the department, through the assistant chief food and drug inspector, filed complaint in the Sedgwick county courts against the notorious Professor Samuels, prince of fakers, who manufactures the so-called "Prof. Samuels' Treatment Through the Eye," which is composed chiefly of water, salt and sugar. This remarkable solution is used to treat some fifteen or more diseases, among which are tuberculosis and bright's disease. The remedy is applied by dropping the solution into the eye after first having separated the victim from his money. The professor expects to fight the case through the court of last resort, if necessary, and you may be assured that the food and drugs law will be as vigorously tested as to its constitutionality, together with the rules and regulations of the Board, as a shrewd grafter and his well-paid attorneys can devise.

At the Duluth meeting of the Association of State and National Food and Dairy Departments, the report of the committee on coöperation, of which your secretary was chairman, was adopted and ordered printed. If the plan as adopted by the Association is promulgated by the Department of Agriculture, it is believed that one of the greatest steps has been taken toward uniformity, coöperation and efficient enforcement of the food and drugs laws, and which will give more certain and quick results than have hitherto characterized the enforcement of these laws.

WATER AND SEWAGE.

Upon the request of the secretary, our engineer prepared an emergency plant for the hypochlorite treatment of domestic water supplies, to be used in cases of epidemics of typhoid fever due to a polluted city water supply. Immediately upon its completion the following circular letter was sent to health officers:

"STATE BOARD OF HEALTH,
DIVISION OF WATER AND SEWAGE.

"To County and Municipal Health Officers: July 12, 1912.

"The periodical prevalence of typhoid fever in certain cities using surface or river water as a source of their domestic water supply has been a source of continual concern to the Department of Health, and much thought and painstaking investigation has been given to the possi-

bilities of eliminating or reducing to a minimum the dangers of local communities from typhoid fever from this source.

"We are therefore pleased to announce that our engineer, Professor Wm. C. Hoad, has built a portable plant, that can be shipped to any place in the state, and within a few hours after arrival can be put into operation for the purification of contaminated water by what is known as the "hypochlorite treatment," which has been proven to be very effective, yet leaving the water in a pure and wholesome condition.

"The department will be glad to respond to the call of any health officer, where it is reasonably certain that typhoid fever exists by reason of a polluted city water supply. The only expense charged will be the freight and drayage on apparatus, and the cost of the hypochlorite of lime used.

Very truly yours,

S. J. CRUMBINE, M. D., *Secretary.*"

Thus far the plant has not been called for, although in one Kansas town steps are being taken to put in a hypochlorite plant for purifying the city water supply.

After several years' delay, the report of Mr. Horatio N. Parker, assistant hydrographer of the U. S. Geological Survey, who made a survey of the waters of Kansas in conjunction with the State Board of Health, has been printed by the government and is ready for distribution. It is suggested that the members of the Board avail themselves of this report, not only individually, but in recommending its use wherever necessary.

In compliance with the order of the State Board of Health, the National Oil Refinery at Coffeyville has built, at considerable expense, a plant for collecting their waste acids, thereby utilizing them again and providing for proper disposal of the sludge and oil wastes from the refinery. Thus a great industrial waste that hitherto was discharged into the Verdigris river, basely polluting the water and killing large numbers of fish, has been effectively prohibited by the Board's order. Similar plants are being built at Independence for the oil refinery and rubber plant at that place.

The city of El Dorado has thus far refused and neglected to comply with a former order of the State Board of Health to purify their sewage. This former order was based upon the fact that the city of Winfield secured its domestic water supply from the Walnut river, into which the sewage of the city of El Dorado was discharged. Since that time additional reasons have arisen why the city of El Dorado should be compelled to purify its sewage, in that the city of Augusta is about to establish a city water supply, and after having prospected in all the near-by localities for a ground-water supply, has been forced to go to the Walnut river for water that will give them a sufficient quantity to meet all purposes. It therefore becomes urgently necessary that the city of El Dorado be required to purify its sewage, and it is hereby recommended that the Board issue a new order to the city of El Dorado requiring them to purify their sewage on or before a definitely named date.

HOTEL INSPECTION.

There is nothing very interesting to report under the division of hotel inspection, excepting to say that the order of the Board prohibiting the use of the common roller towel is being fairly well observed throughout the state. Numerous devices have been resorted to by many of the more prominent hotels for evading the order, but as fast as the division locates these places, they are given to understand that the roller towel is a thing of the past in this state.

ANTITOXIN DIVISION.

The distribution of antitoxins, serums and vaccines continues, with a gradual increase in the utilization of these modern therapeutic measures by the physicians of the state.

A large number of antityphoid fever inoculation treatments have been

distributed, some eighty-odd inoculations having been made at the University recently, and offers have been made by the Board to furnish typhoid bacterins free to the other state institutions.

The splendid showing made of the utility of antityphoid inoculation at the recent army maneuvers in Texas seems to indicate that typhoid fever may be effectively controlled once the general public will take advantage of securing immunity by this means, as they have in securing immunity from smallpox. The day seems to be not far distant when the control of typhoid fever will be fairly well in hand.

ANTERIOR POLIOMYELITIS.

Fortunately for the children of the state, there have been but a comparatively few cases of anterior poliomyelitis occurring this season. On July 12 the following circular letter was issued to health officers:

"To County and Municipal Health Officers:

"At the annual meeting of the State Board of Health, held June 12, 1911, a regulation was unanimously adopted providing for an absolute quarantine in all cases of anterior poliomyelitis for a period of four weeks from the beginning of the acute symptoms of the disease.

"This action was taken upon the request of a joint committee of the American Orthopedic Association and the American Pediatric Society, which was sent to all state boards of health, and which recommendation is as follows:

"All cases of infantile paralysis should be strictly quarantined, sputum, urine and feces being disinfected, and the same rigid precautions being adopted as in scarlet fever. This quarantine should, in the opinion of the committee, last for four weeks in the absence of definite knowledge as to when the infection ends. Children from infected families should not be allowed to go to school until the quarantine is abandoned. It would be very desirable to adopt provisional quarantine measures in suspicious cases in a community where an epidemic prevails."

"It is strongly urged that all cases be effectively screened against the house-fly. Reports of new cases should be made by telegraph or long-distance phone. Very truly yours,

S. J. CRUMBINE, M. D., *Secretary.*"

Up to the present time there have been but fourteen cases in the state this year.

LEPROSY.

Two cases of leprosy have been discovered in Kansas this year. The first, the case of a Mexican laborer in Wichita; being an alien, there was no difficulty in securing his deportation to his native country. The other case occurred in a citizen of this state, a Mrs. Quint of Hays, Kan., the diagnosis being confirmed by a number of bacteriological examinations of the tissues of the patient, as well as the secretions from the nose. The county board of health of Ellis county has agreed to purchase a small farm and isolate the case in the country on a farm, providing a separate house for the patient and a near-by adjoining house for the husband and two children. It seems as if this would be the most humane as well as the most effective way of sufficient isolation, not only for the general public but the family as well. Just to what extent there may be other infected cases in her family, or the community, has not as yet been determined, although bacteriological examinations of the nasal secretions of the balance of the family are negative. It is well known, however, that the disease is very slow in manifesting itself clinically, so that it is impossible to determine as to whether or not there are other cases that are already infected.

It is my purpose to keep very close track of the family for the next few years, and I have arranged to take them to the University hospital for treatment upon the first signs of infection. Recent reports indicate

the possibility of cure by the use of lepra bacterins in early or incipient cases.

PELLAGRA.

Not only has the extensive heat of the past summer given rise to the suspicion that Kansas is more or less of a tropical country, but the advent of tropical diseases has emphasized that suspicion.

We have to report that since the last meeting of the Board there have been six cases of pellagra reported and two suspects, five of these cases having been confirmed by a number of physicians who were competent to judge of the nature of the disease. Of this number two have died up to the present time. The first two cases reported were from Oswego, and after the nature of the cases was fully determined I requested Professor Hunter, entomologist of the University, to make a study of the surroundings for the purpose of determining whether or not the sand fly—the insect which Sanbon declares is the medium of dissemination of the disease—existed in that locality. Accordingly Prof. Hunter, with an assistant, has made a thorough investigation and has found a large number of sand flies, with an extensive breeding place in a creek near where the family live. Traps over these breeding places have been erected, and experiments are being conducted with guinea pigs and monkeys in order to determine, if possible, what part, if any, the sand fly plays in the dissemination of the disease. One of the patients in question kindly loans her arm for the purpose of presumably inoculating the flies, which, in turn, are placed in cages with guinea pigs, and more recently with monkeys. Controls are used, by which the freshly hatched uninoculated flies are used in like manner. There seems to be a growing tendency among investigators to discredit the Sanbon theory, and to lean towards the nutritional theory of the disease, which may either go back to the maize theory, or to the more recent theory promulgated by a Georgia physician, in which he accuses the semi-drying oils, such as cottonseed oil or the benne oil as used in continental countries, to be the cause of the nutritional toxemias in which the clinical manifestations of pellagra are the visible marks.

SMALLPOX.

The summer season has brought to Topeka one of the most serious epidemics of smallpox that has visited the state since the State Board of Health was created. The disease first appeared on the east side of the city, in the usual mild type that has prevailed throughout the state for so many years. The first few cases were diagnosed as "chicken pox" by the attending physician, and thus no precautionary measures were instituted to prevent exposures until large numbers were exposed and the disease began to assume a more virulent type, when its true nature was discovered. The city board of health took prompt and vigorous measures for its suppression, but so many exposures had been made among large numbers of unvaccinated people that the result was a widespread epidemic, confined, however, to the east side of the city.

Altogether there have been 131 cases, of which number 21 died, making the mortality 16 per cent. At the present time there are five cases remaining in quarantine at the city detention hospital; all other cases, so far as known to this department, having recovered and been discharged from quarantine.

Several important medical facts worthy of record should here be noted: First, of the 21 who died, not a single one had ever been successfully vaccinated; of the 131 persons who had the disease, but four had ever been successfully vaccinated; one of these, a woman of 70 years had been vaccinated in her infancy; another had been vaccinated fifty years before, and the two others some thirty-odd years before. In no instance did any person contract the disease where a recent successful vaccination had been made. In several families the only person escaping in an entire family was the single vaccinated person in that family. Two cases were reported in which the patients had had a mild attack of

smallpox several years previously, which is additional proof to the statement your secretary has made on a number of occasions, that a recent successful vaccination will give a more certain immunity from smallpox than a mild form of the disease. The writer has observed, during the seven and a half years he has been secretary, a large number of cases where they have had this mild type of smallpox twice within from one to four years, but has never observed a single case of smallpox in a person that had been successfully vaccinated within two years.

The city board of health of Topeka deserves a great deal of credit for the vigorous and effective fashion in which they have handled the situation, which at one time seemed to threaten the entire city. They have ordered that all school children be required to show a certificate for a successful vaccination on and after the 23d of October, which it is believed is highly important, in view of the serious condition that has prevailed in the city hitherto.

On Friday, October 13, I was called to Winfield to assist in making a diagnosis in an epidemic of some eruptive disease which the city health officer declared was chicken pox but the attending physicians of the city believed to be smallpox. There was no question in establishing the fact that it is indeed smallpox. As a considerable number of cases are those of school children who had been sent from school while ill, it is thought wise to either close the public schools temporarily, or to require all pupils to be vaccinated or to show a certificate of successful vaccination, else be barred from the schools temporarily. Upon my suggestion, the city authorities chose the latter course, so that, beginning on the following Monday, the order was made effective, but the public schools can continue with those in attendance who have taken the precaution to secure immunity.

TUBERCULOSIS.

Owing to our inability to secure an opinion from the attorney-general's office concerning the use of our tuberculosis fund, this year's educational campaign has not yet been inaugurated. There remain but eight months of the current fiscal year, beginning November 1, and I would recommend to the Board that, in addition to a lecturer, we secure some suitable person for the purpose of making a very thorough and painstaking investigation and study of the tuberculosis cases that exist in the larger cities of this state, including a sociological and industrial survey, in an endeavor to determine the conditions that contribute to the dissemination of this disease in that particular locality. It seems to me that this is an exceedingly important work, and I was greatly impressed with the report of the sociological and industrial study of tuberculosis in the six Pennsylvania cities to which I alluded in the opening of this report. I therefore recommend that the Board authorize the secretary to employ a suitable person to carry out this plan.

The advisory commission of the state tuberculosis sanatorium is at work studying the question of a suitable location for that institution. It is hoped that within another twelve months the state may be able to properly care for her uncared-for advanced cases, and at least afford the proper treatment and care for a limited number of incipient cases.

The compulsory notification and registration of tuberculosis law has not yet been as efficiently complied with as is possible, but following the policy of the Board to gradually, by persuasion and educational methods, bring about a full compliance with the law the following circular letter was issued to health officers:

"To County and Municipal Health Officers: . . . "JULY 12, 1911.

"The compulsory notification and registration of tuberculosis law has been in force for two years, but I regret to say is not being enforced by many of the health officers as it should be.

"May I request that you very carefully re-read the entire law, in order that you may thoroughly familiarize yourself with its require-

ments; and then may I ask that you join with us in a vigorous campaign for its literal and complete enforcement. It is suggested that you issue a circular letter to the doctors of your jurisdiction, offering to supply them with the necessary blanks, and requesting their cooperation in this means of tuberculosis control. All reports received by you should be immediately registered, and the original reports forwarded to this office without delay.

"Prophylactic supplies will be furnished to all registered cases in which the tubercle bacilli has been demonstrated, when requisitioned upon the regular form.

"After the vital statistics law becomes operative, all deaths from tuberculosis will be carefully checked, and if no report has been made in each case, complaint will be filed with the county attorney against the physician who failed to report the same. There will be no favors shown. We are desperately in earnest in the matter.

Very truly yours, S. J. CRUMBINE, M. D.,
Secretary."

The increased number of reports would seem to indicate that this letter had a wholesome effect.

THE UNIVERSITY MEDICAL HOSPITAL.

On next Monday, October 23, the new University Medical Hospital at Rosedale will be opened to receive patients, in accordance with the provisions of the laws passed by the last legislature. The state and local boards of health have a distinct and material connection with the University in the enforcement of these laws, and it is our hope that the sanitary organization of the state may be greatly strengthened, and that the uncared-for poor of the state may be suitably provided with skilled and up-to-date care and treatment, and thus not only a new weapon be placed in our hands for the cure and prevention of disease, but the good name of our state be preserved, in that proper provision has been made for the care of her unfortunates.

ASIATIC CHOLERA.

The condition during July as to the possibility of cholera getting a foothold in this country was so grave that I issued the following circular letter to county and municipal health officers:

"JULY 15, 1911.

"To County and Municipal Health Officers:

"For the past year the Public Health and Marine Service has taken extraordinary measures to prevent cholera from being introduced into this country from infected foreign ports. A number of cases have developed on shipboard, and a number of cases have developed in quarantine.

"The possibility of the 'bacillus carriers' was recognized, and as a precautionary measure, the Immigration Service has been sending immigrant destination slips to the state health officer, of all immigrants whose destination was in his state, in order that surveillance might be exercised in all such cases. In Kansas these slips have been sent to the respective county health officers with a request that should the immigrant show any symptoms of sickness that samples of the feces be immediately forwarded to the state laboratory for examination for the cholera bacillus.

"At last the expected has happened, and two probable 'bacillus carriers' have gone through the quarantine station, landed on American soil, and later developed the disease and died, as indicated in the public health reports of July 7, 1911.

"Some thirty-odd cases have appeared in the Hawaiian Islands, thus more or less threatening our western coast; so that the situation is not without danger.

"This information is addressed to you that you may exercise the ut-

most diligence in locating, as far as possible, all immigrants arriving from infected ports whose slips are sent you; and that careful surveillance be exercised over these cases through local physicians or city officials, where the person is not in your own city or community.

Very truly yours, S. J. CRUMBINE, M. D.,
Secretary."

"Post Script:

"MONDAY, July 17, 1911.

"Since writing the above, our statement concerning the gravity of the cholera situation has been strikingly confirmed by the Associated Press reporting a death of an American in New York from the disease, and this morning's information is to the effect that there are fifteen cases and four suspects in Swinburne Hospital, New York.

"All this does not prove that cholera will appear in Kansas, but it does indicate possibilities, particularly in 'carrier' cases.

"The people of Kansas are relying on Kansas health officers to be on the alert, that we may not be caught unawares.

Very truly yours, S. J. CRUMBINE, M. D.,
Secretary."

On September 25 I received a telegram from Marion county to the effect that there was a suspected case of cholera in a recently arrived emigrant from an infected port. A request to Washington by wire for cholera agglutinating serum somewhat stirred the surgeon-general, and he immediately ordered Dr. McLaughlin, past surgeon of the United States Public Health and Marine Hospital Service, who was temporarily located at Chicago, to report to Topeka at once. Dr. McLaughlin arrived the following morning, and after several days of painstaking bacteriological examination it was concluded that the case was not a case of cholera.

GENERAL.

The outlook for the future, so far as the department's work is concerned, is hopeful. Each succeeding year adds to the amount as well as to the kind of work the department is called upon to do. While there have been no more preventable diseases prevalent during the past year than is commonly prevalent, yet the secretary finds less and less time to devote to epidemiological work. Oftentimes it is absolutely necessary for a thorough and painstaking investigation concerning the origin and dissemination of certain infectious diseases, particularly that of typhoid fever, where a trained man might, with very great profit to the community, spend a week or two in such work, but the Board is quite fully aware of the impossibility of the secretary devoting such time to this important work. I therefore desire to call the Board's attention to the necessity, which has existed for some time, and which will be more and more apparent as the days go by, of having as a part of the Board's staff a medical inspector who can devote his time to this very important and necessary work. The leading and progressive state boards of the country have long since had such a person on their regular working force, and I therefore recommend that the Kansas State Board of Health, by resolution, request that the next legislature provide the necessary salary and funds for a trained physician, or sanitarian, to carry on this phase of the department's work.

Respectfully submitted. S. J. CRUMBINE, M. D., *Secretary.*

SECRETARY'S REPORT.

THE THIRD QUARTERLY MEETING OF THE STATE
BOARD OF HEALTH.HELD AT THE OFFICE OF THE SECRETARY, IN THE STATEHOUSE,
JANUARY 30, 31, 1912.

On Monday night, November 20, 1911, in the city of Washington, Surgeon-general Wyman died after a brief illness. Doctor Wyman was a little past 63 years of age; he had been in the Marine Hospital Service since 1876, having been surgeon-general since 1902; his funeral was held in the city of St. Louis, November 24, at which place a representative of this department, Dr. Charles H. Lerrigo, was present. Doctor Lerrigo will undoubtedly give a personal report of his mission. Doctor Wyman was a man of strong personality, and under his masterful direction the work of the Public Health and Marine Hospital Service was brought to a high state of efficiency. Probably the most signal service rendered to the country through Doctor Wyman's organization was the eradication of the plague from the Pacific Coast, which was the most thorough and successful that has ever been made in the history of the world.

The surgeon in immediate charge, Dr. Robert Blue, has shown by his splendid services his fitness to succeed Doctor Wyman as surgeon-general. At all events, the President seemed to think so, as it has been unofficially announced that Doctor Blue would be the next surgeon-general of the United States Public Health and Marine Hospital Service.

DIVISION OF WATER AND SEWAGE.

In accordance with the direction of the Board at the last quarterly meeting, the order to the city of El Dorado was submitted to the attorney-general for his opinion, which has been given, and is to the effect that the order was not sufficiently definite and clearly stated as to insure a successful prosecution in bringing action against the city. He therefore recommended that a new order be drawn up and passed upon by the Board at this meeting, which will later be presented under unfinished business.

In this connection, I desire also to invite the Board's attention to the fact that the time set by the Board in its order given to the city of Hutchinson, wherein it was requested that that city take steps to insure the purification of the city's sewage, or to divert it from its present outflow into Cow creek, expired on January 1, 1912, and the city has not complied with the order. It is therefore recommended that the Board request the attorney-general to bring suit against the city of Hutchinson for the enforcement of this order, in accordance with the provisions of the law.

On November 24, 1911, the following letter was sent to the acting surgeon-general, which letter is self-explanatory of the subject matter treated:

"TOPEKA, KAN., November 24, 1911.

"Acting Surgeon-general, U. S. Public Health and Marine Hospital Service, Washington, D. C.:

"DEAR DOCTOR—Some time ago Hon. W. R. Stubbs, governor of Kansas, appointed a commission of three, consisting of the engineer for the State Board of Health, Prof. Wm. C. Hoad, the bacteriologist of the University, Prof. F. H. Billings, and the writer, to join with like commissions from the states of Missouri, Nebraska, Iowa and North Dakota for the purpose of a study of the sanitary conditions of the Mis-

souri river, an interstate stream bordering on the aforesaid states. Up to the present time the governors of these states have not appointed their commissions, but the Kansas commission believes that the study should be undertaken independently rather than have the matter go by default, and therefore makes the request that you duly detail a competent man to join with the Kansas commission in a thorough and sanitary study of the Missouri river.

"Kindly advise me at your earliest convenience if our request can be granted.

"Bacteriological and chemical examinations of such samples of water as may be desired to be taken can be done at the University of Kansas.
Very truly yours, S. J. CRUMBINE, M. D., *Secretary.*"

To this letter the following reply was received:

"WASHINGTON, November 29, 1911.

"*Dr. S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:*

"DEAR DOCTOR—The bureau is in receipt of your letter of the 24th instant relative to a proposed study of the sanitary conditions of the Missouri river, and requesting the assignment of an officer to cooperate with the commission appointed by the governor of Kansas to undertake the above-mentioned studies. It is the desire to cooperate in matters of this kind, since they have an important bearing on the spread of contagious and infectious diseases in interstate traffic. The shortness of officers at the present time makes it necessary to inquire when it is proposed to start the investigations mentioned, and whether, on account of weather conditions, the studies would probably not be undertaken until the early spring.

"On receipt of a reply from you the matter will be further taken up in order to see what can be done to assist your Board.

Respectfully, A. H. GLENNAN, *Acting Surgeon-general.*"

It is expected that as soon as the weather becomes settled in the spring the Kansas commission, jointly with a representative of the Public Health and Marine Hospital Service, will undertake a sanitary survey of the Missouri river.

The details of this division's work will be submitted by the engineer.

DIVISION OF FOOD AND DRUGS.

Under the cooperative agreement between the states and between the federal government and the several states, the department issued its first confidential circular letter on November 9, 1911, which was sent to all other state food and drug officials in the United States. This letter is as follows:

"Circular No. 1.

"STATE BOARD OF HEALTH, DIVISION OF FOOD AND DRUGS,
November 9, 1911.

"In accordance with the recommendation of the committee on cooperation, the following information is herewith submitted:

"1. An extended investigation by Prof. C. C. Young and Mr. N. P. Sherwood, of the water laboratories of the State Board of Health at the University of Kansas, on the effect of certain bacteria when carbonated under pressure, the same conditions prevailing in which soft drinks are prepared, discloses the fact that the statements which have at times appeared in literature to the effect that carbon dioxide under pressure markedly reduces the number of bacteria in water was not borne out by the experiments conducted.

"These experiments were carried on with water inoculated with *Bacillus typhosus*, *Bacillus coli communis* and *Bacillus prodigiosus*, and bottled with and without syrup and flavoring material, similar to the methods pursued in ordinary sodawater or pop-bottling establishments.

"The water was carbonated at 18 pounds pressure and at 10 degrees

C. and capped. Cultures were taken from these bottles after 4 hours, after 28 hours, after 80 hours and after 244 hours, and while the number of virulent bacteria was reduced in the longer periods of time, yet growing cultures were obtained from all the bottles up to 244 hours.

"From these observations it is manifest that manufacturers should not depend upon contaminated or polluted water for the manufacture of soft drinks under the supposition that the carbon dioxide under pressure will kill such bacteria. Water used for the purpose should be of known purity.

"2. At a recent meeting of the State Board of Health the regulations of the food and drugs law were amended in several important particulars, as follows:

"*Regulation 5, Paragraph b.* Proprietary medicinal preparations and similar medicinal products are required to conform in composition to the freshly prepared nondeteriorated article, and to conform to the claims made for the preparation as to therapeutic properties, quality and strength.

"*Regulation 11, Paragraph d.* (New paragraph.) In the case of eggs from cold storage of more than two weeks, or which have been packed in any preserving substance, the wholesale or retail package, when delivered to the purchaser, shall bear a label designating such storage or preservation.

"*Regulation 14, Paragraph 3.* Vinegars artificially colored, or made from materials specially chosen to impart a color similar to that of cider vinegar, are held to be imitations of cider vinegar, unless *each package, wholesale and retail, as delivered to the purchaser, is distinctly marked by a label which states the true nature of the article.*

"*Regulation 15, Paragraph e.* Descriptive matter upon the label shall be free from any statement, design or device regarding the article, or its therapeutic properties, or the ingredients or substances contained therein, or quality thereof, or place of origin which is false or misleading in any particular. In the case of materials used in the preparation of foods or medicinal preparations, descriptive matter upon the label shall be free from any false or misleading statement in regard to the composition or ingredients of the food or therapeutic properties of the medicinal product.

"*Regulation 36, Paragraph 3.* An article or substance which is designated as 'germicide' or 'disinfectant' in the state of Kansas will be held to be of such a character that it will actually kill any nonspore-bearing bacterium within six hours under the conditions prescribed for its use. If directions for use are not expressly stated, those conditions usually found in living rooms will be assumed for its application.

"The terms 'germicide' and 'disinfectant' are used interchangeably to mean substances that actually destroy, and not merely inhibit the growth, of bacteria.

"3. An analysis of Professor Samuels' treatment through the eye discloses the fact that this fake nostrum is essentially composed of a solution of salt and sugar. It is claimed that by dropping this solution into the eye it will cure consumption, heart disease, hay fever, morphine habit, catarrh, kidney trouble, eczema, fits and spasms, cataract, constipation, granulated eyes, blindness, bladder trouble, palsy, rheumatism, bright's disease, bronchitis, stomach trouble, diabetes, liver trouble, gall stones, deafness, asthma, goitre, tumor, nervousness, dropsy and neuralgia.

"*Draw your own conclusions!*

Very truly yours,

S. J. CRUMBINE, M. D.,
Chief Food and Drug Inspector."

On December 11, 1911, circular letter No. 2 was issued, which is as follows:

"Circular No. 2.

"STATE BOARD OF HEALTH,
December 11, 1911.

"TO STATE FOOD AND DRUG OFFICIALS:

"Inasmuch as the Association of State and National Food and Dairy Departments has on a number of occasions recommended that the office of food and drug control officials be removed from politics, and that appointments for commissioners be based upon merit alone, the chairman of the committee on coöperation, speaking only for himself, is of the belief that such action will be more quickly and more certainly brought about by each commissioner first taking his own department out of politics and having the appointments of inspectors made on a basis of merit rather than on political faith.

"The division of food and drugs of the Kansas State Board of Health some time ago recognized this principle, and recently held an examination to fill a vacancy in the drug-inspection force. Believing this to be in the nature of advanced legislation, and the practical way to bring about the elimination of politics from the food and drug control work, the examination questions used at the recent examination are herewith submitted for the information of commissioners.

"It might be of interest to add that out of the eight applicants two made a passing grade of 70. The highest-grade man is appointed and the other one passing is put on the eligible list for appointment within one year should a vacancy occur. After this time new examinations are required.

Respectfully submitted.

S. J. CRUMBINE, M. D., *Chairman.*"

Many letters of appreciation have been received from other state food and drug control officials, and it is believed that the committee's plan will prove most valuable.

The examination for filling the vacancy of drug inspector was held in the office of the Secretary on December 1 and 2. The following call was published in the daily press, which constituted the notice to applicants:

"Examination for State Drug Inspector.

"The Kansas food and drugs law requires that appointments of food and drug inspectors shall be based upon a competitive examination. There being a vacancy in the drug-inspection force, an examination will therefore be held for the position of drug inspector on December 1 and 2 at the office of the secretary of the State Board of Health in Topeka.

"Candidates for the examination should forward their names and addresses to the secretary, Dr. S. J. Crumbine, Topeka, Kan., stating their experience in drug work, if graduates of any school of pharmacy, from what school and the date of graduation, and such personal references as to their character and ability as they desire to present.

"The age limit for this position is confined to ages between 25 and 40 years.

"The appointment to this position will be made by the State Board of Health and selection made from among those who pass the examination."

The result of the examination and the report of the committee are herewith submitted:

1. H. O. Smith, Atchison, Kan.....	62.60
3. Albert O. Spence, Wakefield, Kan.....	53.16
4. W. F. Woodford, Topeka, Kan.....	56.39
5. Frank E. Rowland, Mulvane, Kan.....	81.94
7. Mabel I. Getman, Topeka, Kan.....	53.66
9. L. M. Grubbs, Topeka, Kan.....	66.42
10. John F. McGill, La Harpe, Kan.....	68.78
12. R. A. Hiller, Hutchinson, Kan.....	80.03

1, 2 Spelling	3
3 Arithmetic	5
4 Pharmacy	10
5 Drug Inspection	20
6 Food Inspection	10-40
7 Penmanship	3
8 Letter	9
9 Experience	30
10 Oral	10

	1	3	4	5	7	9	10	12
1, 2.....	.6	.96	.8	2.7	2.01	1.32	1.71	2.32
3.....	2.0	2.98	3.53	4.46	2.20	1.48	1.51	2.19
4.....	5.3	6.15	5.25	8.45	4.90	4.70	5.29	5.20
5.....	10.2	13.00	10.8	18.40	9.60	17.00	13.60	17.8
6.....	3.7	3.3	6.1	6.78	5.90	4.57	6.72	5.82
7.....	2.1	2.1	2.1	2.55	1.80	1.65	2.4	2.55
8.....	5.4	4.5	4.5	8.1	4.50	7.2	8.10	8.15
9.....	24.3	13.17	10.11	22.5	17.75	19.5	19.5	27.00
10.....	9.	7.	6.	8.	7.	9.	10.	9.
	62.60	53.16	56.39	81.94	53.66	66.42	68.78	80.03

Grand average 65.37

“DECEMBER 8, 1911.

“The Kansas State Board of Health, Dr. B. J. Alexander, President, Hiawatha, Kan.:

“GENTLEMEN—Your committee that was appointed to conduct an examination for a drug-inspector beg leave to report that they conducted an examination for this purpose on December 1 and 2, 1911, and have carefully examined the papers of the eight candidates who presented themselves for the examination, with reference to the following points: Spelling; arithmetic; drugs, practical questions; foods, practical questions; pharmacy, practical questions; penmanship; letter-writing; oral examination on sanitation.

“They find that there are two candidates who have a passing grade, which is over 70, namely, the one marked No. 12, who has a grade of 80.03; and No. 5, who has a grade of 81.94. They respectfully recommend the appointment to this position of the candidate No. 5, who has a grade of 81.94.

“They further recommend that No. 12 be placed on the eligible list for the appointment as inspector of this department, in case a vacancy should occur within one year from date.

Respectfully submitted.

S. J. CRUMBINE, M. D.,
E. H. S. BAILEY,
L. E. SAYRE,
J. T. WILLARD,
Committee.”

On December 9 the following circular letter was sent to dealers in eggs:

“TO THE DEALERS IN EGGS:

“DECEMBER 9, 1911.

“GENTLEMEN—At a regular meeting of the State Board of Health held October 21, 1911, the following regulation, known as paragraph d, regulation 11, for the enforcement of the food and drugs law, was unanimously adopted, and was published in the official state paper November 11, 1911:

“Regulation 11 (d). In the case of eggs from cold storage of more than two weeks, or which have been packed in any preserving substance, the wholesale or retail package, when delivered to the purchaser, shall bear a label designating such storage or preservation.”

“The attention of the department has been called to the fact that during this time of the year a large number of eggs are ‘held’ but are not kept in cold storage, and a proper label for such goods is requested. A tentative regulation is therefore made, that such eggs, held under proper conditions of storage and temperature for more than two weeks during

the months of December, January and February, shall be labeled on both the wholesale and retail packages, as 'held eggs.' Eggs that are held at any other season of the year would be subject to the same rules of candling and 'loss off' as current-receipt eggs are held.

"This is to advise you that the above regulations are effective at this date.

Yours very truly,

S. J. CRUMBINE, M. D.,
Chief Food and Drug Inspector."

It appears to be the unanimous expression of egg dealers that the condition of the Kansas egg the past season, notwithstanding the intense heat of the midsummer, has been better than at any other season in our experience, all of which seems to justify the action of the Board in requiring eggs to be candled, and lends encouragement to the belief that we are on the right road to eventually solving in a sane and fairly effective fashion the problem of the rotten egg.

The long-continued cold weather of December and early January has made an abundant ice crop throughout the state, and letters have come to the department in great numbers asking our opinion as to whether or not ice could be harvested from rivers, creeks and ponds to be used for the refrigerating of food products. On the other hand, many letters of complaint and opposition have been received, opposing the storage and use of ice from supposedly polluted water. The department's decision in this matter is based upon the experiments conducted by Park on the Croton aqueduct water and the New York State Board of Health on the Hudson river water—which experiments seemed to be practically in agreement—to the effect that polluted water, after it has been frozen for three months or over, is essentially sterile. The New York State Board, using their own experiments as a basis of regulation, has added a month to the period of storage as a margin of safety, after which they permit the use of the Hudson river water which has been harvested below the city of Albany and contains untreated sewage from that city, but the ice from which has been shown to be sterile after three months' freezing. It may be of interest to quote from Park's experiments as follows:

"In these experiments 21 flasks were filled from the Croton aqueduct (in New York) and each inoculated with a different strain of typhoid bacilli. In one a little of the feces rich in typhoid were directly added. The infected water in each flask was then pipetted into thirty tubes. These tubes were placed in a cold-storage room in which the temperature varied between 20° and 28° F. At first tubes were removed and tested twice a week, later once a week. At the end of five weeks, water infected with six cultures was sterile. At the end of sixteen weeks only six strains remained alive. His figures are: After 5 weeks, 0.1 per cent alive; after 9 weeks, 0.005 per cent; after 16 weeks, 0.004 per cent; after 22 weeks, none alive."

Some time ago I asked Mr. Deem, our drug inspector, as to whether or not the sale of the acetanilid compounds, such as headache preparations, bromoselzer, etc., was increasing in the state to such an extent as would lead one to believe that many people are forming the acetanilid habit. His report is to the effect that there has been a marked increase in the sale of these products pretty generally throughout the state during the past few years, and that many druggists do not hesitate to offer the opinion that they have customers who buy these preparations with great regularity and in such amounts as to lead to the undoubted conclusion that they are addicted to the acetanilid habit. This impels me to venture a recommendation that a committee of the Board be appointed to make further investigation of this subject and to report their findings at a subsequent meeting of the Board, together with a recommendation for such legislation as the condition would seem to warrant. So far as your secretary is concerned, he is now led to make a recommendation that the sale of acetanilid be restricted to physicians' prescriptions, the same as is required in the sale of cocaine or morphine.

The latter part of October the Board of Food and Drug Inspection at Washington submitted tentative food inspection decisions on vinegar and maraschino cherries, requesting the department's opinion concerning the proposed decisions. After consultation with the standards committee, the following letter was sent to the Board expressing the views of this department:

"TOPEKA, KAN., November 13, 1911.

"Dr. Harvey W. Wiley, Chairman, Board of Food and Drug Inspection, Washington, D. C.:

"DEAR DOCTOR WILEY—I am inclosing herewith comments of Professor Bailey, food analyst for the State Board of Health at Kansas University, Lawrence, also a letter from Professor Willard, food analyst for the State Board of Health, Agricultural College, Manhattan, relative to the proposed standards on maraschino cherries and vinegar.

"You will notice that they are both in accord with the standard for maraschino cherries.

"I desire to say that I agree with both Professor Bailey and Professor Willard in their objections offered to the dilution of vinegars and, for my own part, I disagree with the proposed standard on imitation vinegar which permits such vinegar to consist in whole or in part of dilute acetic acid, with added coloring and flavoring.

"I am also in further agreement with the food analysts in voicing the sentiment that Kansas will not join the federal government in its proposed standards on vinegars if they are adopted as herewith presented. We very much desire to have our standards and our regulations in uniformity with the government's, but we are of the opinion that we can not consistently, in view of the nature of our laws on the subject, go as far as the proposed standards would go. It seems to me an exceedingly dangerous proposition to open up the doors on dilute vinegars, for in my judgment it would mean the practical ruination of the apple cider vinegar business, at least so far as the farmer's product is concerned, as competition would probably force the dilution of apple cider vinegars with the commercially cheaper although equally meritorious product of distilled vinegar, which could be sold at such a low price as to make the manufacture of apple cider vinegar commercially unprofitable.

Very truly yours, S. J. CRUMBINE, M. D.,
Chief Food and Drug Inspector."

On December 2 the following letter was sent to the manufacturers of mincemeat in Kansas:

"TOPEKA, KAN., December 2, 1911.

"GENTLEMEN—Tentative standards on mincemeat have been submitted to this department by the government with request that any suggestions which might differ from the contemplated government standards should be submitted with briefs in support of such differences.

"Inasmuch as the manufacture of mincemeat is a large industry in Kansas, the department would be glad to hold a hearing on the subject under the supervision of the committee on standards of the division of food and drugs, which will be held in the office of the chief food and drug inspector at Topeka on December 8, at 10 A. M.

"It is the desire of the department to follow as nearly as possible the federal government in the matter of food standards, which will be done in this case unless there are sufficient reasons to the contrary that would justify the Kansas department in making different standards.

Very truly yours, S. J. CRUMBINE, M. D.,
Chief Food and Drug Inspector."

After the hearing of the manufacturers with the standards committee, the following letter was sent to the Board of Food and Drug Inspection,

conveying the opinion of the department as recommended by your committee on standards:

"TOPEKA, KAN., December 8, 1911.

"Board of Food and Drug Inspection, Dr. H. W. Wiley, Chairman, Washington, D. C.:

"GENTLEMEN—Replying to your circular letter of the 21st, concerning the tentative standard for mincemeat, will say, that after consultation with Professors Bailey, Willard and Sayre, analysts for this department, and after hearing the opinions of a number of manufacturers of mincemeat in this state, we beg to express the opinion that the standard include the ingredient of glucose among other ingredients that may be used without special designation upon the label.

"We are also of the unanimous agreement that starch is not a normal constituent of mincemeat, and should therefore not be an ingredient thereof, either with or without special designation.

Very truly yours,

(Signed)

S. J. CRUMBINE, M. D.,

Chief Food and Drug Inspector."

Mr. Floyd Tilford, the assistant chief food and drug inspector, will give a detailed report of the operation of the division of foods and drugs for 1911. His report, I am sure, will show a gratifying condition of the work, and I feel that the efficiency the department has attained is a matter of congratulation to the State Board of Health.

DIVISION OF VITAL STATISTICS.

On January 10 the following confidential circular letter was sent to certain selected men and women of the state, which letter is self-explanatory:

Personal and confidential.

"JANUARY 10, 1912.

DEAR SIR—Through the operation of the vital statistics law some very valuable information is being collected and some very startling sociological facts presented, which hitherto were unknown or only suspected.

"The State Department of Health is desirous of utilizing this data in such a way and manner as may be of the greatest benefit in the correction, if possible, of certain social evils. Ordinarily, vital statistics are used only for recording the movement of population, for locating the foci of infectious diseases, for the study of occupation and location on morbidity and mortality, and for legal purposes. We believe that a broader interpretation should be given to such valuable data, and that it should be utilized for the betterment of social conditions, if possible. However, we are uncertain how to proceed and also uncertain as to the methods to employ as a reasonable working basis, and therefore propose to call a conference of certain representative men and women of the state to meet with the State Board of Health on January 30, at the office of the secretary, in the statehouse, at two P. M.

"The following questions, on which we desire your valuable opinion, are suggested for discussion:

"1. (a) Should the number of illegitimate births be published monthly in the Bulletin or given to the daily press? (b) Would such procedure have a deterrent effect on illicit intercourse? (c) Would it give *Kansas undesirable advertising* without compensating benefit?

"2. (a) Should the department insist on complete and literal enforcement of the law in demanding the name of the father of an illegitimate child, so it might be made a matter of permanent record? (b) Could the statement of the mother, if forced to make a statement, be relied on as being true? (c) Do the rights of the child demand that an effort be made to name the father? (d) Should the law be invoked in case of failure?

"3. (a) Should the number of cases of death from abortion and miscarriage in the unmarried be published? (b) Should the number of such cases in the married be published. (c) Should an investigation be made as to whether or not a crime had been committed in suspected cases?

"4. (a) Should publicity be given to an increasing number of suicides? (b) Should the method of 'suicide route' be stated? (c) What part does 'suggestion' play with the morbid, unbalanced or temporarily insane person who contemplates suicide?

"5. (a) Should publicity be given to deaths from industrial accidents, giving name and location of industry? (b) Would the public be likely or able to discriminate between unavoidable accidents and those due to neglect or carelessness of employer or employee? (c) In case of death from avoidable accident, what course should be pursued?

"6. (a) Should deaths from venereal disease be published? (b) Should the department undertake the publication and distribution of a pamphlet on 'Sex Hygiene'? (c) If so, what method of distribution would you suggest?

"7. If publicity is desirable and advised in any or all of these things, what methods should be pursued?

"The department expresses the hope that everyone invited to the conference may be able to come and feel free to take part in the discussion.

Very truly yours,

S. J. CRUMBINE, M. D., *Secretary.*"

"To: His Excellency, W. R. Stubbs, governor, Lawrence.
 Prof. E. T. Fairchild, state superintendent public instruction, Ellsworth.
 Hon. F. D. Coburn, secretary State Agricultural Society, Topeka.
 Prof. F. W. Blackmar, sociologist, Kansas University, Lawrence.
 Prof. D. M. Fisk, sociologist, Washburn, Topeka.
 Prof. W. A. McKeever, sociologist, K. S. A. C., Manhattan.
 Mr. Frank T. McLennan, publicist, *Journal*, Topeka.
 Mr. Harold Chase, publicist, *Capital*, Topeka.
 Mr. W. Y. Morgan, publicist, *News*, Hutchinson.
 Mr. W. A. White, publicist, *Gazette*, Emporia.
 Mr. E. E. Stout, publicist, *Star*, Kansas City, Mo.
 Rev. S. S. Estey, minister, Topeka.
 Rev. C. M. Sheldon, minister, Topeka.
 Rev. Father F. M. Hayden, priest, Topeka.
 Judge J. C. Ruppenthal, district judge, Russell.
 Mrs. Julia Perry, Girls' Industrial School, Beloit.
 Mrs. M. D. Atkinson, president State Federation of Women's Clubs, Parsons.
 Mrs. J. A. Unternaher, matron Crittenton Home, Topeka.
 Mrs. Lee Monroe, president City Federation of Women's Clubs, Topeka.
 Warden J. K. Coddling, State Penitentiary, Lansing.
 Dr. J. T. Axtell, president State Medical Society, Newton.
 Dr. Chas. Huffman, secretary State Medical Society, Columbus.
 Dr. L. L. Uhls, superintendent State Hospital, Osawatomie.
 Dr. T. C. Biddle, superintendent State Hospital, Topeka.
 Mr. Horace Hall, business man, Topeka.
 Mr. M. B. Williams, farmer, Winona.
 Mr. E. W. Charles, Boys' Industrial School, Topeka.
 Dr. Cressy L. Wilbur, statistician, Bureau of the Census, Washington, D. C., and the members of the State Board of Health."

The result of this conference speaks for itself, and will be reported in full at the annual meeting, together with such other matters as are related thereto.

The head of the division will give a detailed report of the work thus far accomplished, which promises to be most valuable indeed.

DIVISION OF COMMUNICABLE DISEASES.

In accordance with the approval of the Board at the last quarterly meeting, to secure one or more expert men to carry on the anti-tuberculosis work, I have secured the services of Dr. Leo Haughey as lecturer and Mr. John Wylie as assistant. The work is now being carried on in the smaller towns of the state that had not hitherto been visited, the exhibit not now being taken on the road for display; thus more towns are visited and I believe more effective work is being accomplished.

The following towns have been visited since the beginning of this year's work (to February 1, 1912):

De Soto, Alta Vista, Eudora, Dwight, Perry, Lost Springs, Lecompton, Hope, Maplehill, Gypsum, Lindsborg, Haviland, Marquette, Preston,

Kanopolis, Turon, Chapman, Partridge, Niles, Sylvania, Bennington, St. John, Delphos, Macksville, Glasco, Belpre, Glen Elder, Whiting, Cawker City, Muscotah, White City, Netawaka, Valley Center, Goff, Sedgwick, Corning, Halstead, Centralia, Burrton, Vermilion, Nickerson, Irving, Ellinwood, Waterville, Little River, Barnes, Galva, Linn, Canton, Randall, Hillsboro, Jewell, Mullinville, Burr Oak.

Doctor Haughey reports a large attendance and enthusiastic interest, notably among the teachers and school children. The record of attendance shows that persons have heard the doctor's lectures and seen the moving pictures and stereopticon views which were nightly displayed.

We also were fortunate in securing the services of Dr. John J. Sippy, county health officer of Sumner county, who started in working for the department under the title of epidemiologist for the Board. He has completed a very thorough social and industrial study of tuberculosis in the cities of Wichita and Hutchinson, and is now working in Kansas City, Kan. In addition to this, he has made a study of typhoid fever in the city of Hutchinson, where there were an unusual number of cases the past summer. Doctor Sippy's final report from the city of Wichita indicates that there have been 106 cases of tuberculosis in that city from July 1, 1909 (the date of the notification law), to January 14, 1912; the number of deaths among reported cases, 46; the number of deaths among unreported cases, 44; the number of cases having left the city and state, 18; number of cases having left the city, still in the state, 3; number of cases known to be living in the city at the present time, 27; number of cases in the city but which could not be found, 8; total, 35. Number of cases interviewed and data taken, 6. We have accurate detailed reports covering 32 living cases of tuberculosis in the city of Wichita at the present time. These reports cover, first, the personal medical history of the case; second, the home conditions; third, the housing conditions; fourth, the general working conditions; and fifth, the other members of the family. These conditions are herewith outlined by filing with this report a blank which has been adopted in gathering this information. The average age of all cases in Wichita is 32 years, 2 months, 6 days; average age of deaths, 34 years, 5 months and 4 days; average age of patients living, 33 years, 10 months, 6½ days. Of cases reported, 98 are white, 4 negro, 4 Mexican. Of all deaths, 80 were white, 6 negro, and four Mexican. In addition to this work, Doctor Sippy has accomplished the following in Wichita, which things have also been taken up in each other city visited:

Additional Items Accomplished.

"1. The consideration and probable passage by the city commission of a new building code to prevent the congestion of population under improper housing conditions.

"2. Coöperation of city registrar and city health officer whereby all deaths from contagious diseases, but more particularly tuberculosis and typhoid fever, which are often not previously reported, are reported promptly to city health officer, and thus no infected houses escape thorough disinfection.

"3. The disinfection of several houses which had escaped attention of city health officer, particularly the house at 1955 S. Lawrence street, wherein had developed four cases of tuberculosis in four years.

"4. Thorough instruction of every case interviewed, and furnishing of supplies to such as seemed in urgent need of same (some twelve requisitions having been made), and the placing of each case in touch with the local and state boards of health.

"5. The distribution of some 500 pamphlets to employees in department stores, and the enlistment of the sympathy of their managers and employers in the fight against tuberculosis.

"6. A report previously furnished on general insanitary housing conditions of Mexican employees of various railroads, and on the need for improvement.

"7. The promotion of a general better understanding between the

physicians (some 150 in number) and the city registrar on the requirements of the vital statistics law.

"8. The promotion of a greater interest by physicians in the work of the State Board of Health, and the enlistment of much support for new and needed legislation to aid the latter in its work. Am satisfied that much is to be expected from the Sedgwick county profession along this line.

"9. The reaching of the conclusion, on which action either by the State Board of Health or by legislation is very imperative, that some means should be taken to protect the various laborers in trades from dust irritation to which they are subjected in carrying on their trades. More particularly should laundry workers be protected from contagion in the handling of infected clothing, by a thorough method of the disinfection of all laundry immediately on its entrance to the buildings from the wagons which collected it. JOHN J. SIPPY, *Epidemiologist.*"

It can be seen, therefore, that his services are valuable not only as an epidemiologist, but also in representing the department in the various phases of its activity in the department's relation to the physicians and the sanitary organizations of the state.

During the course of investigation Doctor Sippy discovered a case of tuberculosis, in a box car on the railroad right of way containing ten other persons—windowless, unventilated, and in such an insanitary condition as would undoubtedly bring about the ultimate infection of every person contained therein. I asked him to make a very detailed survey of the housing conditions upon the railroad rights of way in the city of Wichita, which was done, and submitted to the department on December 30, and is herewith appended as a portion of this report:

HOUSING CONDITIONS ON RAILROAD RIGHTS OF WAY, WICHITA, KAN.

BUILDING AND STREET NUMBER.	Owner.	House description.				Windows.			Water.	Toilet.
		No. of rooms.	Dimensions.	Floor area.	Cubic space.	Number.	Size.	Area.		
342 S. Santa Fe.	Tipton.	1	9x18x6	182	972	1	1x2	2	None.	None.
343 S. Santa Fe.	"	1	12x12x7	144	1,008	2	2x3	18	"	"
342 S. Santa Fe.	"	1	12x12x7	144	1,008	2	2x3	18	"	"
315 S. Santa Fe.	Tardien.	1	8x20x7	240	1,680	2	2x2 1/2	10	Well.	Earth vault fair.
Shack on Santa Fe.	"	1	10x18x10	192	1,800	1	2x2	4	"	"
Shack on Santa Fe.	"	1	10x12x8	120	960	1	2x2	4	"	"
Shack on Santa Fe.	"	1	12x14x8	168	1,344	1	2x2 1/2 in.	22	"	Earth vault fair.
515 Santa Fe.	"	2	10x10x7 1/2	300	2,250	5	2x2 1/2 in.	44	"	"
			10x20x7 1/2			1	2x30 in.			
Shack on Santa Fe.	A. T. & S. F.	2	10x16x8	240	1,920	1	2x2	4	"	"
Box car	"	1	8x22x8	256	2,048	2	2x3	12	Pump.	None.
Shack	"	1	14x14x8	196	1,568	2	2x2	8	"	Bad.
Box car	"	1	8x26x8	208	2,804	2	2x2	8	"	"
Box car	"	1	8x26x8	208	2,804	1	20x20 in.	3	"	"
Shack.	C. R. I. & P.	2	10x14x3 1/2	224	1,904	1	14x14 in.	1 1/2	None.	"
	"	2	6x14x8 1/2			3	1x1 1/2			
Shack.	"	1	12x18x8	408	2,882	1	2x2	18	"	"
Box car.	"	1	8x22x8	256	2,048	2	2x2	16	Pump.	"
Box car.	"	1	8x22x8	256	2,048	4	2x2	16	"	"
Box car.	"	1	8x22x8	256	2,048	4	2x2	16	"	"
		1	80x20x8	2,400	19,200	18	2x3	78	None.	"
		1	18x12x8	216	1,728	1	2x3	6	"	"
		1	18x12x8	216	1,728	1	2x3	6	"	"
		1	18x12x8	216	1,728	1	2x3	6	"	"
		1	18x12x8	216	1,728	1	2x3	6	"	"
		1	12x20x8	240	2,880	2	2x3	12	"	"
		1	12x12x8	144	1,152	1	2x3	6	"	"
		1	12x12x8	144	1,152	1	2x3	6	"	"
		1	12x12x8	144	1,152	1	2x3	6	"	"
		1	12x12x8	144	1,152	1	2x3	6	"	"
		1	18x12x8	216	1,728	1	2x3	6	"	"
		1	18x12x8	216	1,728	1	2x3	6	"	"
		1	80x20x8	2,400	19,200	1	2x3	12	"	"
Old store room on S. St. Francis. (Cut into rooms per outline.)	Fitch.	1				2	2x3	6	Two.	Earth vault filthy.

HOUSING CONDITIONS ON RAILROAD RIGHTS OF WAY, WICHITA, KAN.—CONCLUDED.

BUILDING AND STREET NUMBER.	Occupants.			No. wage earners...	Income.	Rent.	Sanitation.	Remarks.
	Men	Women	Children					
342 S. Santa Fe.....	1	1	1	1	\$1.50	\$3.00	Bad.....	Board and paper building; leaks badly.
342 S. Santa Fe.....	1	1	1	1	1.50	3.00	".....	Board and paper building; leaks badly.
342 S. Santa Fe.....	1	1	2	1	1.50	3.00	".....	
515 S. Santa Fe.....	2	2	2	2	1.50 & 1.25	Free.	Fair.....	One case pulmonary tuberculosis. See report 9.
Shack on Santa Fe.....	1	1	3	1	1.20	\$2.00	Bad.....	
Shack on Santa Fe.....	1	1	1	1	1.20	2.00	".....	
Shack on Santa Fe.....	1	1	1	1	50c to 75c	3.00	".....	
515 Santa Fe.....	1	1	2	1	\$1.20	5.00	Very fair.....	Much better than average; partly white.
Shack on Santa Fe.....	1	1	4	1	1.25	Free.	Bad.....	Building leaks badly and very damp.
Box car.....	1	1	5	1	1.25	"	".....	Children barefoot and barely clad.
Shack.....	1	1	3	1	1.25	"	".....	One man had la grippe apparently.
Box car.....	10	1	3	10	1.25 ea.	"	".....	
Box car.....	5	2	3	5	1.25 ea.	"	".....	
Shack.....	2	2	2	2	1.25 ea.	"	".....	
Shack.....	1	1	1	1	1.25 ea.	"	".....	
Box car.....	3	1	1	1	1.25 ea.	"	".....	One man ill; had cold.
Box car.....	4	1	1	1	1.25 ea.	"	".....	
Box car.....	15	3	3	15	1.25 ea.	\$3.00	".....	
Box car.....	1	1	1	1	2.50	2.50	".....	
Box car.....	1	1	1	1	2.50	2.50	".....	
Box car.....	1	1	1	1	2.50	2.50	".....	One suspected intestinal tuberculosis.
Box car.....	2	1	1	2	2.50	2.50	".....	Baby three weeks old.
Box car.....	1	1	1	1	2.50	2.50	".....	Vacant.
Box car.....	2	1	1	2	2.50	2.50	Bad.....	
Box car.....	1	2	2	1	2.50	2.50	".....	Commissary in this room very bad.*
Box car.....	1	2	2	1	7.00	7.00	".....	

Old store room on S. St. Francis
(Cut into rooms per outline.)

*Mexicans working for A. T. & S. F.

Summary of Preceding Table.

Total number occupants of buildings, 103.
 Total number apartments, 28; rented, 18; free, 10.
 Total amount cubic space, 49,118; average per person, 477 cubic feet.
 Total amount floor area, 6282; average per person, 61 square feet.
 Total amount window area, 242 square feet or 4 per cent of floor area.
 Total amount rent paid, \$53—an average of \$3 each on rented houses, or \$2 on all apartments free and rented, or 5½ cents per occupant per month.
 Total number employed, 50 men, 1 woman.
 Total wages per working day, \$63—an average of \$1.26 per day.
 Total income per month of 20 working days, \$1260, or an average per person of \$12.23.

This revealed such an appalling and dangerous condition that I was constrained to send the following letter to the general managers of the Santa Fe and Rock Island railways:

"JANUARY 13, 1912.

"Mr. C. W. Kouns, General Manager Santa Fe Rly. Co., Topeka, Kan.:

"DEAR SIR—I am inclosing herewith a copy of report of a social and sanitary survey made in Wichita on the railroad rights of way of the Santa Fe and Rock Island railways covering, as you will see, the housing conditions of Mexican laborers employed on these two railway systems. This inspection was made by the epidemiologist of the State Board of Health, Dr. John J. Sippy, under the direction of this department, and, I think you will agree with me, discloses a condition as to crowding, lack of air space, lighting and ventilation, filthy surroundings with inadequate or no toilet or water facilities, which not only is a menace to the health of the people living in these places, but a foci of infection which is of greater or less danger to the entire community, and which should not be permitted to exist.

"Doctor Sippy in his notes declares that the living conditions are really much worse than can be indicated by a mere chart of the gathered data, as members of families make no admission of having roomers or boarders, which information, from other sources, indicates that there are a number of such living, at least in part, in these rooms and shacks, which are in addition to the members tabulated in the report. To quote his own words:

"To look at the bare facts and figures does not do justice in the way of description. I wrote you of finding eleven people in one box car, one of whom—a woman—was a tubercular patient, and four of whom were little children playing about on the floor of the dark, windowless and fetid, unventilated room, where cooking, dining and sleeping conditions were all one. The woman died on the 27th inst., and on yesterday's inspection I found the car deserted and the inhabitants scattered throughout the rest of the camp.

"You will note that I found almost as bad a condition yesterday in finding two box cars, one of which, with only eight square feet of window area (and these were tightly closed), contained ten men, while the other, with only three square feet of window area (also closed), had five men, two women and three children.

"Sanitary conditions are unspeakable! I found only five toilets, and these of the common earth open-vault type, filthy beyond description. These five vaults are used by the whole population, both floating and stationary. In the case of the old store room, the entire twenty-six people and all of their visiting friends use the same privy. The water supply is from driven pipe wells with pumps (common pitcher type), and the yards around them reek with filth of every description.'

"The doctor continues in the report, and says that he found but one well-lighted house that was in any way well kept. He declares that most

of the places are so dark that it is found necessary to burn oil lamps for lighting constantly.

"The State Board of Health is aware that these people naturally have very low standards of living, and yet we are of the belief, which Doctor Sippy's further investigation seemed to prove, that other Mexican laborers who live in decent houses about the city are not only better housed and better provided with water and sewage facilities, but that the houses themselves are kept in better sanitary condition. In other words, if these people are permitted or required to live in places that are really fit for human habitation they will more nearly approach the standards of American living, but they certainly never can do anything for themselves so long as the railroad companies apparently make no effort to give them decent facilities or proper housing in which it is possible for them to do much better than they are now able to do.

"The department is inclined to the belief that the railroad companies are chiefly responsible, if not entirely, for their presence in the state, which everyone recognizes has been a necessity; but with that recognition we are almost inclined to fix the responsibility on the railroads for the inhuman conditions in which they are permitted to live, where such conditions are found upon railroad rights of way. Furthermore, we are of the belief that the management can not certainly be aware of the actual facts, which are doubtless similar throughout the state where these people are crowded together; and we feel quite sure that, now that the matter has been thus definitely and specifically brought to your attention, that it will receive your earnest thought and consideration and that decent housing and proper facilities will be afforded them, if you desire them to live upon the right of way, or that the pest-houses of infection be abolished and they be required to look after their own places of residence the same as other laborers. I presume that permission has been given to this class of laborers to utilize places of this sort on the ground of the company's desire to help them, but we have found that this present plan has built up such a dangerous community life from a sanitary standpoint as to be intolerable. Moreover, it appears to me that in many instances the pollution of box cars, concerning which grocers and other shippers of merchandise complain so bitterly, must be due, in part at least, to these people who are not provided with sanitary conveniences. Frankly, I do not know that such is the case, but it would seem to be inevitable that box cars standing upon the sidetracks would be utilized for such purposes during the daytime in the absence of toilet facilities.

"I would be very glad indeed to have your company make a very thorough investigation and survey of all of your Mexican laborers' camps located on your right of way in this state, and I am very certain that conditions will be revealed which will be so repugnant to your sense of justice and decency as to cause the immediate setting of plans on foot for the betterment of these conditions. May we be assured of an early investigation and your report and conclusions as to what can be done in the matter?

Very truly yours,
(Signed) S. J. CRUMBINE, M. D., *Secretary.*"

Reply has been received from the Santa Fe Railway Company, which is herewith submitted:

"TOPEKA, January 16, 1912.

"*Dr. S. J. Crumbine, Secretary, State Board of Health, Topeka, Kan.:*

"DEAR SIR—Replying to your letter of January 13, with reference to sanitary conditions and surroundings of the Mexican track laborers employed by this company: I will make immediate investigation of such conditions and will advise you of the result thereof.

Yours truly,
(Signed) C. W. KOUNS, *General Manager.*"

In addition to all of this splendid work by Doctor Sippy, he called on every physician doing business in the city, and got into personal and vital touch with him by explaining somewhat in detail the nature and

operation and the reasons for the various health laws, and personally provided each physician with report blanks, making a note of the time and date when these blanks were given. This was for the express purpose of hereafter enforcing the notification law, as the law specifically provides that blanks shall be furnished, and the department now has evidence that the blanks have been properly furnished and due notice has been given.

A survey of the cases of tuberculosis in Hutchinson, indicated in Doctor Sippy's report, is as follows:

Total number of deaths not previously reported, 8.

Total number of cases reported, 29.

Total number of deaths among reported cases, 7.

Total number recovered, 1.

Total number left city and state, 5.

Total number still in the city and county, 16.

Average age of cases, 33 years, 7 months, 13 days.

Average age of deaths, 36 years, 1 month, 17 days.

Average age of living cases, 36 years, 9 months, 7 days.

Number of cases visited and reported, 8.

Number of doctors visited and instructed as to the requirements of the vital statistics and antituberculosis laws, 36.

Undertakers and the secretary of the Cemetery Association were also visited and instructed as to the proper method of filing death certificates. In like manner blanks were left with every physician visited.

It is worthy of note that in both Hutchinson and Wichita a large number of cases left the city and state, namely, 18 in Wichita and 5 in Hutchinson—a total of 23, or about 5% per cent of the total number of cases reported in these two cities. The old idea of sending patients away from home for treatment still prevails to a considerable extent. Indeed, many of these cases were in the advanced stages of the disease, and met the pathetic, and I might say "tragic," fate that thousands do from all over the United States, to the disgrace and shame of the profession who send them away from their homes!

On December 19 Doctor Sippy was requested to go to Neosho Falls to investigate a continued epidemic of smallpox, which apparently little effort was being made by the local authorities to control. The State Normal School at Emporia was thrown into a panic by a student coming down with the disease who had been exposed in the depot at Neosho Falls. The result of Doctor Sippy's visit, in conjunction with a threat from this office that the city would be put in quarantine unless the local authorities took serious hold of the situation in accordance with the law, was effectual, and at the present time the epidemic has been abated.

ANTERIOR POLIOMYELITIS.

One of the surprises of the cold weather has not been the low pressure of gas, as that was to be expected, but the continuation of isolated cases of anterior poliomyelitis being reported, there having been four cases reported thus far in January, while three cases were reported in December.

PELLAGRA.

One effect of the cold weather seems to have been an arrest of any further spread of pellagra; at all events, no cases have been reported since our last report was made. Thus far there have been eight known cases of the disease, with two deaths and at least two suspects. There can scarcely be any doubt but what with the advent of the warm weather and bright sunshine of the spring new cases will arise in what is presumably the infected district of the state.

GENERAL.

The general health conditions throughout the state since the last quarterly meeting have been highly satisfactory, no unusual or virulent epidemics having come to our notice. Much more might be accomplished in the investigation of disease epidemics had we adequate funds at our command, and the work of Doctor Sippy simply emphasizes the statement which I made at the last quarterly meeting of the absolute necessity of the Board having a trained epidemiologist on its staff to investigate epidemics of diseases and conditions that favor the dissemination of the same.

Following the custom which has prevailed for several years, the following circular letter was issued to boards of county commissioners:

"JANUARY 4, 1912.

"Hon. Board of County Commissioners, The County Board of Health:

"GENTLEMEN—I desire to invite your attention to section 8033 of the Revised Statutes of 1909, which provides that the preference for the election of your health officer shall be given to an 'adept in sanitary science.' This means that the practice of some boards in appointing this important officer on the basis of competitive bids, and thereby making a selection in accordance with the provision of the statute, is both illegal and impossible.

"It is quite apparent that the lowest bidder is more likely to be one who is the least qualified to meet the requirements of the law, rather than the physician who is the best fitted by knowledge and experience to fill the most important office in the county. The hope is expressed that appointments will always be made in the spirit as well as the letter of the statute.

"I also desire to call your attention to the provisions of chapters 292, 293 and 294, Laws of 1911, which provide for the hospital care and treatment of certain classes of cases of the county poor at the Bell Memorial (University) Hospital, Rosedale. Blanks for admission and further information will be furnished upon application.

Very truly yours, S. J. CRUMBINE, M. D., *Secretary.*"

I am glad to say that in a number of instances, at least, health officers have been selected with the view of securing the best man for the place, while salaries have been increased to a considerable extent.

"Respectfully submitted. S. J. CRUMBINE, M. D., *Secretary.*"

SECRETARY'S REPORT.

ANNUAL MEETING OF THE STATE BOARD OF HEALTH.

HELD IN THE OFFICE OF THE SECRETARY, IN THE STATEHOUSE,
JUNE 6 AND 7, 1912.

MR. PRESIDENT AND MEMBERS OF THE STATE BOARD OF HEALTH—The end of the present fiscal year completes my eighth year of service as secretary for the State Board of Health, having been a member of the Board for six years previous thereto.

In looking over the progress that has been made in the work of the department during the past eight years, it is a matter of considerable gratification to the secretary, at least, and I believe to the entire Board, to note the forward strides the department has made in so brief a space of time in building up a sanitary organization which for effectiveness and efficiency is, perhaps, without a parallel in the country, length of time considered.

I trust the Board may pardon any personal allusions, but it seems highly appropriate to briefly review the development of this department during this period of years. When your secretary assumed the duties of the office the working force consisted of one stenographer and himself. What little was then undertaken, under the provisions of our inadequate laws, on an average consumed from one to two hours a day, the secretary thus having most of his time to engage in private practice; indeed, should his practice be of a particularly urgent nature, he could without hurt to the Board's work absent himself a number of days from the office. The laws then on the statute book simply required him to have general supervision over the reports of contagious diseases and to issue an annual report to the governor. Quarterly reports were required of the health officers throughout the state. Many of these reports were never made, which fact, together with the length of time of the entire quarter for their making, made them of no worth or value. Taken all together, the work of the department was very much of a farce, with no special laws to enforce outside of the quarantine law, with no appropriations of sufficient amounts to undertake any special work, and with no available force by which any unusual work might be accomplished. Compare those conditions with the situation of to-day—a most rigid and far-reaching water and sewage law, one of the best food and drug laws in the United States, an efficient vital statistics law; tuberculosis legislation, embracing compulsory reports, statewide educational campaigns, and, finally, a tuberculosis sanatorium; the distribution of free anti-toxins, a weights and measures law, hotel supervision, and a large number of minor sanitary enactments giving the State Board of Health ample authority in almost every phase of public hygiene and sanitation.

This progress would seem to indicate that we have had the support of the people in the work of the department, which in a general way, is true; yet we have encountered many obstacles, chief of which is the dead-weight indifference of the average person in matters of public hygiene and sanitation. There has also been more or less active opposition, and it is to be expected that from this time forward such opposition will rather increase than diminish, for it is but natural that in the enforcement of law those who come in contact with the penalties of the law are resentful and usually take every opportunity to obstruct or impede the work of that particular department.

Perhaps one of the most notable changes in public health work is the

new idea concerning the dissemination of disease. Formerly, boards of health were chiefly concerned with places and environment as the medium of distribution of contagious diseases; the new idea is that the individual is chiefly the carrier of infectious disease, and so our chief concern is in finding the afflicted persons, or the carriers of micro-organisms, all of which means greater emphasis being placed upon the utilization of well-known scientific measures rather than futile attempts to discover fomites, miasms, or other indefinite conditions or things.

This new idea in our public health work leads me to recommend, first of all, as I have done on a former occasion, that the time has now come when it is absolutely necessary for the State Board of Health to have at its command an epidemiologist, whose business will be to make careful and searching study of epidemics of diseases, finding the cause and, if possible, the individual that is the occasion of an epidemic in any community; for when that is once determined the proper procedure as to the employment of preventive measures is clearly indicated.

COMMUNICABLE DISEASES.

Dr. John J. Sippy has been temporarily filling the place of epidemiologist for the Board, and has about finished the social and industrial survey of tuberculosis in the ten cities of the first class. I have requested him to make a tentative report of his work to the Board in person, which later on will be carefully tabulated, digested, and published in a future issue of the BULLETIN.

The housing and social conditions found in several of our larger cities were nothing short of appalling, and in Kansas City, Kan., tuberculosis parallels in morbidity and mortality any other prevalent communicable disease that exists to-day. During Doctor Sippy's seven weeks' stay in Kansas City 24 people died from tuberculosis, which, together with the large number of living cases, certainly warrants the assertion that tuberculosis is epidemic in the metropolis of Kansas. The fact that the doctor found a number of cases of tuberculosis among the chicken pickers of a certain packing plant, and also that during March of this year five employees of a packing industry of that city, and in April three others, died of tuberculosis, seems to be sufficient warrant for the institution of ways and means for making an early discovery of this disease among those who handle food products. Accordingly a letter was addressed to all the packing houses in Kansas, which in substance is as follows:

"TOPEKA, KAN., April 27, 1912.

"GENTLEMEN—I notice in the death returns from Kansas City, Kan., for the month of March the death of four packing house men from tuberculosis.

"Will you kindly indicate to this department what ways or means, if any, you have of determining whether or not your employees, particularly those handling meat products, are free from tuberculosis or other infectious diseases? Are they examined at regular intervals? Has there been any systematic effort made towards locating cases of incipient tuberculosis? Would you be willing to issue an order requiring that a painstaking examination be made of your employees by giving the tuberculin test, or other means for determining the exact number of tuberculosis cases in your employ.

"There is no question in my mind but what a considerable number will be discovered, as, for illustration, our epidemiologist discovered five cases among chicken pickers of a certain packing plant last month.

"Your early reply to these questions will be highly appreciated.

Yours very truly,

S. J. CRUMBINE, M. D., *Secretary.*"

Replies to these letters have been received from most of the packers, but up to the present time no definite program has been decided upon. I respectfully recommend that the action of the secretary in this matter

be indorsed, and that the packing establishments of the state be required to put into operation some reasonable yet effective means for the discovery of all cases of communicable diseases in their establishments.

I believe I mentioned in my last annual report the occurrence of an epidemic of what was then supposed to be ptomaine poisoning near Peabody, but which later proved to be, in addition to the ptomaine poisoning, an explosion of typhoid fever. It develops that a Mrs. Dohner, who prepared the pressed chicken for a missionary luncheon, of which 25 of the 26 people present partook, was a typhoid carrier; that eight years previous she had had typhoid fever, and a year following had been operated on for gallstones, the operation resulting in a permanent fistula from which was discharged large quantities of mucus and bile. All of the persons partaking of the pressed chicken were afflicted with typhoid fever, the only person escaping being the one who did not eat any of it. A large number of secondary cases of typhoid fever came down in the families of those afflicted, which, together with the tabulation of cases of typhoid occurring in her own family and in the families of neighbors for the eight preceding years—which cases were undoubtedly infected by this carrier through food or water supplies—makes the astonishing total of 76 cases.

Dr. J. O. First, formerly living at Peabody but now of Los Angeles, Cal., told me last July, when I was in attendance at the meeting of the A. M. A., that he believed this typhoid outbreak at Peabody was occasioned by infection from this woman, giving me the history of her operation and the fact that she had this biliary fistula, and also the observation that typhoid fever had occurred every year in her neighborhood during all of these years; that while he really had not thought much about it during this time, yet with the increased knowledge of the method of dissemination of typhoid fever gained during the last few years, he concluded after having left his Kansas home that Mrs. Dohner must be the carrier. Accordingly, on my return home I asked Dr. E. H. Johnson to submit samples from the biliary fistula to this department for examination, on which the bacteriologist reported in the affirmative. Subsequently samples were sent to five other bacteriologists, two of which gave positive reports and three negative. We were accordingly considerably in the dark as to what to believe, whereupon I submitted a sample to the Hygienic Laboratories of the Public Health and Marine Hospital Service of the United States, at Washington, and received the following letter from the director, Dr. John F. Anderson:

"MARCH 14, 1912.

"Dr. S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:

"DEAR DOCTOR CRUMBINE—With further reference to your letter of March 5, transmitting a sample of bile and also a sample of blood from Mrs. Dohner, of Peabody, Kan., who is suspected of being a typhoid carrier, I have to say that the sample of bile was plated out on differential culture media and from the bile we isolated the typhoid bacillus. The colon bacillus was also found present as a contaminating organism.

"The typhoid bacillus gave all the cultural reactions for this organism, and in addition was agglutinated by a specific serum in a dilution of over 1:10,000. There can, therefore, be no doubt that the bile from Mrs. Dohner contains the typhoid bacillus. This being the case, there is good reason to suspect that she also passes bacilli in her feces.

"On account of the positive result of the bile it was not found necessary to test the blood, as it would have given no additional information.

"It would seem that Mrs. Dohner is a distinct menace to those with whom she may come in contact if she is allowed to have anything to do with the preparation and distribution of food for the consumption of others.

"This fistula is a distinct source of danger on account of the very great liability for her hands and clothing to become soiled with the bile containing the typhoid bacilli.

"I shall be pleased at any time to examine any further specimens from you. This case seems to be a very interesting one and I hope you will report it in the literature.

Very truly yours,
JOHN F. ANDERSON,
Director Hygienic Laboratory."

Mrs. Dohner has since been operated on for a biliary fistula by Doctor Axtell, at Newton, which was a complete success, and it is our intention in a short time to secure samples of the urine and feces to determine whether or not she is throwing off the typhoid bacillus, the result of which I will report to the Board at a later date.

On May 1 the following letter was sent to the mayor of every incorporated city in Kansas, inclosing a model antity fly ordinance, copy of which is also shown:

"TOPEKA, May 1, 1912.

"To the Mayor and Commissioners:

"GENTLEMEN—I am inclosing herewith a copy of a suggested ordinance for the purpose of putting the house fly out of business in Kansas. If we can prevent them from breeding the necessity for "swatting" them will be eliminated. Probably 90 per cent of house flies are hatched in horse manure and outside closets; it is obvious, therefore, that if the manure heap is screened, or, better still, is removed at least once every ten days (the time of the life cycle of its transformation from the egg to the fly), and all outside toilets made fly-proof, there will be 90 per cent less flies in your community.

"The part that flies play in the transmission of typhoid fever, tuberculosis, dysentery and intestinal diseases of childhood is so well known as to need no further comment, but should stimulate every effort that can reasonably be made to protect the health and comfort of our people.

"The department expresses the hope that you may join with us in the work of human conservation by the adoption and rigid enforcement of the ordinance.

Very truly yours,
S. J. CRUMBINE, M. D., Secretary."

"An Ordinance to Protect the Public Health and Public Comfort and Providing Penalties.

"WHEREAS, it is commonly known that flies are very dangerous carriers of filth, filth poisons and disease germs, that they are born in filth and are a constant menace against the health, happiness and comfort of the people; therefore,

"SECTION 1. Be it ordained by the mayor and council of the city of _____, that it shall be unlawful for any person, firm or corporation to create or to place upon their premises, whether owned or leased by them, or to place on any street, alley or common any one or more of the following, to wit: (1) Animal manure, in any quantity, which is not securely protected from flies; (2) privies, vaults, cesspools, pits or like places which are not securely protected from flies; (3) garbage, in any quantity, which is not securely protected from flies; (4) trash, litter, rags or anything whatsoever in which flies may breed or multiply; provided, that between the first day of April and the first day of November, each year, where manure or garbage is not securely protected from flies, such manure or garbage is required to be removed at least once every ten days and destroyed by burning, burying or scattering over a field for fertilizer.

"SEC. 2. It shall be the duty of the chief of police or city marshal and health officer, upon learning, in any way whatsoever, of the existence of one or more of the unlawful conditions described in section 1 of this ordinance, to notify the offender in writing, upon blanks provided by the city clerk, to remove or abate said unlawful conditions, stating the shortest reasonable time for such removal or abatement. In the event of the refusal or neglect on the part of the notified offender to obey such order, the chief of police, marshal or health officer shall file complaint

with the proper city authorities for the enforcement of the law and the collection of the penalties prescribed by section 3.

"SEC. 3. Any person, firm or corporation found guilty of having created or placed on premises either owned or leased by them, or upon any public or private property, any one or more of the unlawful conditions named in section 1 of this ordinance, shall be punished by a fine of not less than five or more than fifty dollars.

"SEC. 4. All ordinances or parts of ordinances in conflict with this ordinance are hereby repealed. This ordinance shall be in effect upon publication in the official city paper."

On May 19 I visited Caney, in response to a notification from Dr. H. L. Aldrich, a member of this Board, that he had a case of pellagra, the first to be reported this year. An examination of the patient, together with the clinical history, leaves no doubt in my mind as to the correctness of the diagnosis.

Prof. S. J. Hunter, entomologist at the University, who last year conducted experiments on the so-called "sand fly" or "Sanbon" theory of the cause of pellagra, was notified of this case, with request that he make an investigation to determine whether or not the sand fly was prevalent in or near the creek which runs through Caney, and near which the patient of Doctor Aldrich lives. Six monkeys have been purchased and turned over to Professor Hunter for carrying on his experiments, and artificial breeding places have been made in the laboratories at Lawrence for the cultivation of sand flies and a minute and detailed study made of their history, habits, etc.

During the past year there have been two severe epidemics of communicable diseases; the first, that of a severe epidemic of smallpox occurring in the city of Topeka, which was reported somewhat in detail at a former meeting; the second, an epidemic of cerebrospinal meningitis in Kansas City, with the disease occurring in endemic form at various places throughout central and eastern Kansas. All together there were in the neighborhood of two hundred cases in the state, with a mortality approaching 65 per cent.

The department has expended money in the distribution of free antimeningitis serum, and at one time had the only available supply west of Chicago. During the past year the department has expended about \$1200 for the free distribution of diphtheritic antitoxin, tetanus antitoxin, antimeningitis serum and the various bacterins and tuberculins, chiefly the typhoid bacterin, and we are of the belief that great good has been accomplished, both therapeutically and in the control of epidemics by the use of these products for immunizing purposes.

WATER AND SEWAGE.

The division of water and sewage for the past year has accomplished a large volume of most important work. Our engineer, Professor Hoad, and his able assistant, Mr. Haskins, have devoted most of their time during the past year to this division of the Board's work.

I am sure that every member of the Board will sincerely regret to hear of Professor Hoad's resignation as engineer for this department and as professor of engineering at the University of Kansas, for his place will be difficult to fill, not only because of his splendid qualifications and his untiring industry and high ideals, but also because he is now most intimately familiar with the water and sewage conditions of the entire state, which knowledge is, of course, of very great value, both to me and the department; yet I am sure we will rejoice in his good fortune, which comes to him in increased salary and probably increased opportunities of usefulness in his new field of work in Michigan. Personally the secretary feels incapable of expressing himself, for he appreciates, perhaps more fully than any other, the quality and value of Professor Hoad's work as engineer, and especially does he appreciate his cordial coopera-

tion in the work as joint executives, and will always treasure with most pleasant recollections the many enjoyable visits we have had together traveling about over the state in the performance of our official duties. To make use of a trite and well-worn expression, "What is Kansas' loss is Michigan's gain"; and the Kansas State Board of Health bids him "God speed" in his new field of labor. The engineer will make a personal and detailed report of the work of that division.

In accordance with the instructions of the Board at the last meeting, on February 17 the following circular letter was sent to all the superintendents of city waterworks in the state:

"To Superintendents of Waterworks:

"FEBRUARY 17, 1912.

DEAR SIR—At a meeting of the State Board of Health held October 20, 21, 1911, a resolution was unanimously adopted which requires that both a sanitary analysis and a bacteriological examination of all water supplies be made at some time during the year 1912, such examinations and analysis to be made at the water laboratories of the State Board of Health at the University of Kansas, Lawrence, Kan.

"Containers will be sent for shipping samples upon application direct to Prof. C. C. Young, Chemist, State Water Survey, Lawrence, Kan.

Very truly yours, S. J. CRUMBINE, M. D., *Secretary.*"

As indicated in my last report, concerning the proposed survey of the Missouri river by the Kansas commission in conjunction with the U. S. Public Health and Marine Hospital Service, I am glad to state that Dr. A. J. McLaughlin, past assistant surgeon of the U. S. Public Health and Marine Hospital Service, has been detailed by the surgeon-general, together with an assistant, Dr. John S. Boggus, to make a sanitary survey of the Missouri river from the Dakotas to its mouth. This work is now under way, and will be featured as a joint work between Kansas and the federal government. Much valuable data will be secured, which must sooner or later result in adequate protection from the increasing pollution of the Missouri river, which is now being used as a source of water supply by a million and a half of people living on its banks.

FOODS AND DRUGS.

The work of the division of food and drugs has continued in about the same manner as usual, that division being now under the supervision of the assistant chief food and drug inspector, Mr. Tilford, who will make a personal report to the Board, giving the details of the work of that division.

The food and drug standards committee held a meeting in the office of the secretary on Wednesday, May 29, at which representatives from the Wholesale Grocers' Association were present. The committee will make its report under the heading of "Committee Reports."

It having come to the department's attention that certain wholesale grocery houses in the state were in the habit of selling swelled canned goods to hucksters, bakers and others, who in turn sold or utilized them for food purposes, the department thought best to issue a general circular letter of warning protesting against such practice. Accordingly, on April 8 the following circular letter was issued and sent to each wholesale grocer in the state and to wholesale grocers doing business in Kansas City and St. Joseph:

"APRIL 8, 1912.

"TO WHOLESALE GROCERS: It has recently come to the notice of the department that swelled canned goods are being sold by certain wholesale interests to hucksters and bakers. While we do not believe this custom is general among the wholesale dealers, yet we are constrained to make this statement: that the department will contest such practice where it may come to our notice in the future.

"I desire to also request that you be very sure that all measures or measuring devices be accurate before selling to retail trade.

"May we also announce that this department is not concerned in the recent order from other sources prohibiting the sale of poison fly paper, our only interest being in the destruction of the house fly and the protection of food products from contamination from these pests.

Very truly yours,
S. J. CRUMBINE, M. D.,
Chief Food and Drug Inspector."

It will, no doubt, be of interest to the Board to learn that the plan of the committee on coöperation of the State and National Association of Food and Drug Control Officials has been duly promulgated by the Department of Agriculture, and thus the dreams of the chairman of the committee, your secretary, have been realized. It is hoped and believed that this plan will greatly simplify and thus greatly add to the efficiency of food and drug control work, not only in the enforcement of the national law, but in the enforcement of the various state food and drug laws.

The subdivision of hotel inspection will be fully reported by Mr. Tilford, who is in immediate charge of that work, but I desire at this time to again give expression to my belief that the enforcement of the hotel law should be placed in the hands of the state labor commissioner, who has charge of all other public buildings under the general factory inspection law.

ANTITOXIN DIVISION.

The number of doses of antitoxin distributed free from this office during the past year is 203. Estimating the mortality from diphtheria without the use of antitoxin and the reduced mortality where antitoxin is used, which has been very definitely worked out, both in this country and abroad, we arrive at the conclusion that the distribution of free antitoxin this past year has saved 136 lives.

It should be noted, also, that the department was able to make arrangements with the Dr. H. M. Alexander Co., whereby an enormous sum of money will be saved to the people of this state in the reduced cost of antitoxin that is purchased on the market, to say nothing about the reduced wholesale cost to the state. Formerly the following prices were charged for diphtheritic antitoxin (which are the uniform prices charged by all manufacturers), as compared with present prices:

No. 1, 1,000 units, former price	\$2.00
present price .....	.70
No. 3, 3,000 units, former price	5.00
present price	1.60
No. 5, 5,000 units, former price	7.50
present price	2.50

It naturally follows that other manufacturers will be forced to meet these prices or to suspend business in this state, for diphtheritic antitoxin is standardized by the federal government, and is therefore practically all alike. Just how much money the reduction in the price of diphtheritic antitoxin, brought about by this department, will save the people of this state is difficult to estimate, as the quantity sold is not known, but it is believed that it will amount to several hundred thousand dollars per annum.

It might not be improper to remark at this time, as in my former report, that the objection occasionally raised as to the cost of maintaining this department is certainly without foundation, as the above is but one of numerous illustrations of the great economic value of this department to the consumers of this state, not only in the actual saving of money, but what is of infinitely greater importance, in being a factor, as we believe, in preventing sickness and saving life.

PUBLICITY AND EDUCATION.

The three years' state-wide educational campaign against tuberculosis conducted by the State Board of Health in this state is about drawing to a close. During this time every city of the first and second class and most of the cities of the third class have been visited by our traveling lecturer, and in all the larger cities with the exhibit. The number of people who have heard the lectures and seen the exhibit, including school children who have heard one or more lectures, is close to half a million. Just the amount of good we have been able to accomplish is, of course, beyond the power of any one to estimate—only the recording angel may, in the days that are to come, be able to tabulate that information.

Much of the Board's literature, consisting of bulletins and pamphlets, have been distributed through this channel. Stereopticon and moving pictures have been freely utilized, while the popular "Almanac" has been added to the Board's educational armamentarium. Last of all, the popular postcard has been utilized for the same purpose.

Properly prepared newspaper and magazine articles have been given to the press from time to time, and through this means of publicity a wide-spread educational propaganda has been carried on most successfully. More and more sanitarians are becoming convinced that their chief and greatest work lies in the direction of educating the people in personal and public hygiene. Certain it is that prevention is the only solution of the control and suppression of communicable diseases, and we have long ago found out that the whole matter of quarantine, or the erection of legal barriers to the advance of disease, does not, as a matter of fact, actually control the disease.

Doctor Haughey has been asked to give a report of his year's work, which I am sure will be found very instructive and interesting.

As a part of the educational propaganda of the State Board of Health, the second annual summer school for health officers and physicians will be convened at the University at Lawrence, June 10-15, inclusive, and we have advance assurances of a very large attendance. Strangely enough, application from a physician in Missouri has been received, asking permission to attend the summer school, and the Journal of the A. M. A. has thought the matter of sufficient interest and importance to speak of it editorially in an encouraging manner.

GENERAL.

Following the letter addressed to the general managers of the Rock Island and Santa Fe railway companies as to the housing and sanitary conditions of Mexican laborers found in the city of Wichita, I received replies from those railways, which are as follows:

"THE ATCHISON, TOPEKA & SANTA FE RY. CO.
OFFICE OF GENERAL MANAGER,
TOPEKA, February 14, 1912.

(Sanitary conditions at Wichita.)

"*Dr. S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:*

"DEAR SIR—Referring to your letter of January thirteenth enclosing a copy of report made by Dr. John J. Sippy covering housing and sanitary conditions of Mexican laborers at Wichita, Kan.

"Our general superintendent and superintendent have made a personal inspection of the buildings occupied by Mexicans on our right of way at Wichita, and we have arranged to take the necessary action to improve such conditions so far as the facilities on our own right of way are concerned. We will arrange to build houses for these Mexican laborers, concentrating them in about three locations, and will improve the sanitary conditions. The houses which we will build can be kept clean and we will try to have the laborers occupying them do so. Of course we can not undertake to govern conditions where men reside off our right of way.

"There is no disposition at all on the part of the company to encourage such conditions as are reported in this case. We are abolishing the use of box-car bodies for the housing of such gangs as are not required to be moved, and are building a standard tie house for occupancy by Mexicans wherever their location is permanent. It is, of course, necessary with extra or floating gangs that bunk cars be provided, as their work does not permit their location in one place for any length of time.

"Such of these Mexicans as we find to be tubercular or otherwise seriously diseased are not retained in our service, but through the immigration department are returned to Old Mexico.

"You may rest assured that you will have the coöperation of this department in bringing about an improvement in sanitary conditions so far as we are able to control them. Yours truly, C. W. KOUNS."

"ROCK ISLAND LINES, LAW DEPARTMENT,
TOPEKA, KAN., January 23, 1912.

"DEAR SIR: Referring to the recent complaint respecting the sanitary conditions in box-car bodies set along right of way of this company for the accommodation of Mexican laborers.

"The only way that conditions may be materially improved is to force the Mexicans to change their method of living. I think you will agree with me that this is a rather difficult undertaking. The standard of living of these people is not up to the standard of this state, even though their present method of living is far above what they were accustomed to in their native land. So far as this company is concerned, however, we have taken the matter up generally over the state, and are making a conscientious effort to improve conditions at these places.

Yours truly, PAUL E. WALKER.

Mr. S. J. Crumbine, Sec. State Board of Health, Topeka, Kan."

After a reasonable length of time another survey will be made of these conditions, and if the railroads have not complied with our request such action will be taken as in the opinion of the attorney-general our laws will warrant for bringing about a correction of these unspeakable insanitary conditions.

On March 13 the following letter was sent to all the railroads operating in Kansas, enclosing a copy of a letter received from a conductor of a certain railway company reciting the conditions that existed on the freight trains of their roads:

Hon. M. A. Low, General Attorney, Rock Island, Topeka.
Mr. C. W. Kouns, General Manager, Santa Fe, Topeka.
Hon. John Madden, General Attorney, M. K. & T. Parsons.
Mr. E. P. Waggener, General Attorney, Missouri Pacific, Atchison.
Mr. W. T. Tyler, General Manager, St. L. & S. F., Springfield, Mo.
Mr. E. Dickinson, Second Vice President, K. C. M. & O., Kansas City, Mo.
Mr. R. B. Scott, General Attorney, C. B. & Q., Chicago, Ill.

"MARCH 13, 1912.

"Mr. J. O. Brinkerhoff, General Sup., Union Pacific Rld. Co., Kansas City, Mo.

"DEAR SIR—I am enclosing herewith a copy of a letter from a conductor of a certain railway company in this state, which is self-explanatory of certain conditions that are existing which seem to me should not be permitted to exist any longer. I am, therefore, asking if you will be so good as to see that an order is issued by the proper authorities which will provide a suitable container for drinking water in cabooses, that can be drawn off through a faucet or spigot, in order that your employees or patrons on freight trains may have an unpolluted and wholesome water supply?

"I trust I may have your assurance that this will be done rather than have the matter submitted to the State Board of Health for the issuance of a formal order.

Very truly yours, S. J. CRUMBINE, M. D., Secretary."

"State Board of Health, State of Kansas, Topeka, Kansas.:

"GENTLEMEN—I would suggest that you order every railroad in the state to equip all of their cabooses with drinking water coolers having faucets or spigots so that the coolers may be kept closed and the water drawn into drinking cups without dipping the cup into the water. As it is now they furnish a keg with a lid to it. When anybody wants a drink they raise the lid and reach down in the keg and dip up the water, and in doing so they generally put a part or all of their hands in the water, and of course they scrape their sleeves over the edge of the keg and rattle off such dust or dirt or filth as may be on their clothing. Men working with cattle or hogs or sheep or horses come into the caboose all dirty and sweating and ram their dirty hands and filthy sleeves into the drinking water. Most everybody that carries their own drinking cup carry the collapsible kind, and it is impossible for them to dip water out of a keg without getting a part of their hands in the water.

"The public drinking cup is n't in it with the public drinking-water keg where everybody that may be riding on the train, and the loafers around depots and others, wash their hands in the drinking water.

Very truly, _____ *Conductor."*

Assurances have been received from the railroads in Kansas that proper water containers would be provided, furnished with a faucet or spigot, which would correct the insanitary condition complained of.

More recently the following letter was addressed to the managers of all the railroads in Kansas:

"TOPEKA, KAN., May 11, 1912.

"DEAR SIR—Will you please to furnish this department with the following information:

"(1) At what points in this state are passenger coaches supplied with water for drinking purposes. Kindly indicate at each place whether or not it is city water that is being used or water from your own plant.

"(2) At what points in this state is ice supplied for cooling water in passenger coaches? Kindly indicate the method of handling such ice. Do you at any points use natural ice for such purposes?

Very truly yours, S. J. CRUMBINE, M. D., *Secretary."*

To Messrs.—

Hon. M. A. Low, General Attorney, C. R. I. & P. Ry., Topeka, Kan.
 Mr. C. W. Kouns, General Manager, A. T. & S. F. Ry., Topeka, Kan.
 Hon. John Madden, General Attorney, M. K. & T. Ry., Parsons, Kan.
 Mr. Baille P. Waggener, General Attorney, Mo. Pac. Ry. Co., Atchison, Kan.
 Mr. W. T. Tyler, General Manager, St. L. & S. F. Ry. Co., Springfield, Mo.
 Mr. E. Dickinson, Second Vice President, K. C. M. & O. Ry. Co., Kansas City, Mo.
 Mr. J. O. Brinkerhoff, General Superintendent Union Pacific R. R. Co., Kansas City, Mo.
 Mr. R. B. Scott, General Attorney, C. B. & Q. Ry. Co., Chicago, Ill.

This information has been requested because of certain known practices of railroad companies which would necessarily pollute even the safest and most wholesome ice-water supplies, together with the fact that in a number of instances natural ice is being used. Replies to this letter have not yet been received from all the railroads.

In addition to this information I have requested Professor Sherwood, of the University, to secure samples of water direct from the ice-water coolers of all the railroads operating in Kansas that enter the union station at Kansas City, as well as samples from all the passenger trains entering the city of Wichita, making bacterial count, and also making the test for *B. coli*. Waters from such roads as are not sampled at these two points will be taken up at such points as can be reached. It is believed that with information from the railroads thus secured, together with actual bacteriological data as to the character of the water being supplied to patrons of the railroads in this state, we will have the basis for putting into effective operation such rules and regulations as will assure the traveling public a safe and wholesome water supply. It is hoped that these reports will be complete and ready to be submitted to you, with recommendations, at our next quarterly meeting.

Early this spring the Pullman Company had cards printed and posted in all the Pullman cars operating in this and other states, bulletining the fact that the porter would furnish a glass for drinking, upon request to any patron desiring to secure it. It was assumed that this would be a clean glass, and that the porter would thoroughly wash and cleanse it before returning it to the locker. Believing this to be in violation of the regulation of the State Board of Health, and also believing and knowing that the order of the Pullman Company was not being properly carried out, a letter was submitted to the company through its sanitarian, Dr. Thomas R. Crowder, advising them of the above facts, which were afterwards satisfactorily adjusted.

In order to test out the degree of efficiency of disinfection as practiced by our health officers throughout the state, arrangements were made with Prof. T. H. Boughton, of the University, to prepare inoculated threads that might be sent out in properly prepared envelopes, to be used as a check on the efficiency of disinfectants. This was done, and the following circular letter sent to Health officers, accompanying a package of these supplies:

"To County and Municipal Health Officers:

"In order that you and we may have positive information as to the efficiency of our methods of disinfection and the kind of disinfectant used, I have requested Prof. T. H. Boughton, of the University medical school, to prepare a method whereby that knowledge may with certainty be obtained.

"Accordingly I am enclosing you material for making these tests, which should be made in the regular course of your disinfection of places in the discharge of your duties as health officer.

"Complete directions are on the small envelopes for placing the inoculated threads, unremoved from the folded paper, at various places about the room to be disinfected. Please to fill out all of the blank spaces on the envelope in which they are to be enclosed after exposure, enclosing all in turn in the large official envelope to the University of Kansas Laboratories.

"We express the hope for your enthusiastic coöperation in this work.
Very truly yours. S. J. CRUMBINE, M. D., *Secretary.*"

Professor Boughton has not yet sufficiently completed the work to draw any general conclusions, inasmuch as a considerable number of the inoculated threads used in disinfecting have not yet been returned to the laboratories, and in a number of instances the data was not sufficiently accurate to enable a publication of the results under the proper headings. He therefore contents himself with making the following statement:

"That the tests thus far have shown neither a distinctly satisfactory or a distinctly unsatisfactory condition in the manner and method of disinfection that is now practiced."

On March 23 your secretary was honored with the privilege of giving an address on "Public Health" at Pierre, the capital of South Dakota. Many of the state officials, including the governor, his private secretary and members of the supreme court, attended the meeting, and it is hoped that some good, at least, may have been accomplished.

Doctor Lerrigo represented this department at the annual conference of the state and territorial boards of health with the surgeon-general, held in Washington, June 1st.

No doubt Doctor Lerrigo will give a detailed report of the conference at the next quarterly meeting.

The rules and regulations formulated by the State Board of Embalming, and submitted to the State Board of Health by mail through the secretary, were unanimously adopted by the members of the Board by letter, but they are herewith presented to you for formal adoption at the annual meeting.

The regulations presented are as follows:

Rules and Regulations Governing the Preparation and Transportation of Dead Human Bodies in the State of Kansas.

USE YELLOW PASTER, ETC.

RULE 1. Yellow pasters used for the transportation of dead human bodies must contain registrar's removal permit, licensed embalmer's certificates Nos. 1 and 2, railway and express transit forms. Paster must be approved by the Kansas State Board of Health. Said pasters to be furnished by the State Board of Embalming of the state of Kansas, and issued only to embalmers holding a valid license from said Board.

The embalmer who prepares a body for shipment, must fill out licensed embalmer's certificates Nos. 1 and 2, also secure registrar's removal permit, all properly filled out in duplicate and signed. Said embalmer shall detach original licensed embalmer's certificate No. 2 and immediately forward the same to the secretary of the State Board of Embalming of the state of Kansas.

The agent of any railway or common carrier who receives a dead human body for transportation must fill out railway or express transit form in duplicate and sign. He shall detach entire duplicate paster (and immediately forward the same to the secretary of the State Board of Health, Topeka, Kan.), and also securely tack (do not paste, or put in envelope), original yellow paster containing registrar's removal permit, licensed embalmer's certificate No. 1, and transit form on top of shipping box or case (so that same can be easily read). Said yellow paster must accompany body to destination.

No person, railway company or common carrier shall receive for transportation any dead human body unless said body is accompanied by a yellow paster properly filled out and signed by a Kansas licensed embalmer in accordance with this rule.

No dead human body (except disinterred body) shall be accepted for transportation unless said body has been embalmed at least twelve (12) hours.

The sale of embalming fluids and hardening compounds and preservatives, to be used for the preparation of dead human bodies, containing mineral poison, is strictly forbidden in the state of Kansas; also the use, in the preparation of dead human bodies, of any such embalming fluid or hardening compound or preservative, containing mineral poison, is strictly forbidden in this state, and labels on containers shall read: "No mineral poison!"

All embalming fluids sold, offered for sale or used for embalming, in the state of Kansas shall have the per cent of formaldehyde gas as contained in the original package, and also the per cent of formaldehyde gas as used according to directions, plainly and correctly stated on the label.

All shipping boxes or cases must have at least six handles.

COMMUNICABLE DISEASES.

RULE 2. The bodies of those who have died of measles, erysipelas, diphtheria (or any diphtheritic disease, including heart failure, croup, membranous croup, angina maligna, putrid sore throat, malignant sore throat), scarlet fever (sometimes called scarlatina, scarlet rash, scarlatinal nephritis, canker rash, rash), glanders, anthrax, smallpox (variola, varioloid), (varicella, chicken pox), Asiatic cholera, yellow fever, typhus fever, bubonic plague, spinal meningitis, pellagra, or leprosy, shall not be transported nor accepted for transportation unless prepared by being thoroughly disinfected by (a) arterial and cavity injection with an approved disinfecting fluid containing not less than fourteen per cent of 40 per cent formaldehyde solution and that the amount of fluid injected must not be less than one-thirteenth of the body weight; (b) disinfecting, and stopping all orifices with dry absorbent cotton; (c) washing the body with a disinfectant, i. e., a solution of bichloride of mercury 1 to 1000 ($7\frac{1}{2}$ grains of the bichloride of mercury to one pint of water). After being prepared and disinfected as above, such body shall be enclosed in an air-tight, metallic, zinc, tin, copper or lead-lined coffin or casket, all joints and seams hermetically sealed or soldered, and all encased in a strong outside wooden or metal box. Or, the body being prepared and disinfected as above, may be enclosed in a coffin or casket, and the coffin or casket encased in an air-tight, metallic, zinc, tin or copper-lined wooden shipping box, or all-metal shipping case, all joints and seams hermetically sealed or soldered.

The embalmer must adhere strictly to modern sanitary methods in regard to disinfection in preparing dead human bodies for shipment under this rule.

NONCOMMUNICABLE DISEASES.

RULE 3. Bodies dead from any cause not stated in rule 2 may be received for transportation when prepared by being thoroughly disinfected by (a) arterial and cavity injections with an approved disinfecting fluid containing not less than 10 per cent of 40 per cent formaldehyde solution; (b) disinfecting, and stopping all orifices with dry absorbent cotton; and (c) washing body with a disinfectant. After being prepared and disinfected as above, such bodies shall be enclosed in a coffin or casket, encased in a strong outside wooden box or metal shipping case.

MANGLE, BURNED, ETC.

RULE 4. Bodies dead from any cause not stated in rule 2, such as bodies badly mangled or burned, that can not be prepared under rule 3, may be accepted for transportation by being thoroughly disinfected by an approved disinfecting compound or preservative and by using air-tight sealing as required in rule 2.

MEDICAL SCHOOLS, ANATOMY, ETC.

RULE 5. The bodies of those dead from any cause, *except puerperal fever* and those stated in rule 2, to be used for demonstration of anatomy in colleges and schools of embalming, or for the use of the State Board of Embalming, may be received for trans-

portation when prepared by being thoroughly disinfected by arterial injection with an approved disinfecting fluid. After being prepared as above, such bodies shall be enclosed in a coffin or casket, encased in a strong wooden box or in a zinc, tin, copper or metal-lined box, or metallic shipping case.

DISINTERRED BODIES.

RULE 6. Before bodies can be disinterred, a disinterment permit must be obtained from the secretary of the State Board of Health. The disinterment permit must be tacked (do not paste or put in an envelope) on top of shipping box, same as the yellow paster, and must accompany body to destination.

No disinterred body, dead from any disease or cause named in rule 2, shall be accepted for transportation until after dead at least two years. All disinterred bodies shall be treated as infectious or dangerous to public health, and shall not be accepted for transportation unless said removal has been approved by the authorities having jurisdiction where such body is disinterred, and the consent of the authorities of the locality to where the body is consigned has first been obtained, and all such disinterred remains shall be enclosed in an air-tight metallic, zinc, tin, copper or lead-lined coffin or casket, all joints and seams hermetically sealed or soldered, and encased in a strong outside wooden or metal box, or casket encased in an air-tight metallic, zinc, tin, copper or metal-lined box or metal shipping case, all joints and seams hermetically sealed or soldered.

RESHIPMENT.

RULE 7. Bodies which have been embalmed and are in good condition may be reshipped by a Kansas licensed embalmer by using yellow paster, filling out licensed embalmer's certificates Nos. 1 and 2, and copying original physician's, coroner's, health officer's certificates or registrar's removal permit.

Bodies not in good condition shall not be reshipped until said body has been prepared and disinfected according to the rules governing the preparation and transportation of dead human bodies in this state.

DEAD BODIES IN TRANSIT.

RULE 8. It is further ordered by the State Board of Embalming, that all dead human bodies coming into the state of Kansas in transit or for burial from other states, shall be accompanied by physician's, coroner's, health officer's certificate or registrar's removal permit, stating cause of death, etc., also by a certificate of a licensed embalmer, stating the body has been embalmed according to the transportation rules of the state from where said body was shipped.

Application is before the department for the approval of the so-called "Thornton device" for sterilizing glasses which can be used in place of the common drinking cup in hotels and other public places. While we have made no bacteriological test of the efficiency of this device, yet it seems to have been worked out by other known bacteriologists and to have proven satisfactory. I would, therefore, recommend that the Thornton device be approved and be permitted to be used in public places in lieu of the common drinking cup. Perhaps another reason why it would be the part of wisdom to approve this device is, the constant difficulty we find in enforcing the regulation in the hotels in this state. Naturally these hotels are inspected only at long intervals, and the regulation may go unheeded for months at a time without the knowledge of the department. If, therefore, some safe substitute can be found, it would seem to be wise to permit the use of such a substitute.

CONCLUSIONS.

All together, the past year's work of this department has been fairly satisfactory in the amount and kind of work accomplished, and while rather strenuous at times, has as a rule been both pleasant and interesting.

The usual duties of the secretary, combined with those of the dean of the school of medicine and as a member of the advisory commission of the state tuberculosis sanatorium, have kept him more than moderately busy; and yet I think it is the experience of every one who has enlarged opportunities for usefulness that even if it means more work, there are compensations. I can not close this report without expressing my keenest appreciation for the admirable support and help given me by my office force. Who could not work with vim and encouragement under the pleasant conditions in which I live! No less satisfying is the knowledge that every member of the office force is very much interested and alive to the work of the department. On more than one occasion that interest has been manifested in a way that is unmistakable.

Respectfully submitted.

S. J. CRUMBINE, M. D.,
Secretary.

**MINUTES OF THE ANNUAL MEETING OF THE STATE
BOARD OF HEALTH,**

HELD IN THE OFFICE OF THE SECRETARY, IN THE STATEHOUSE, JUNE 6
AND 7, 1912.

The annual meeting of the State Board of Health convened in the office of the secretary at two o'clock P. M., June 6. All the members of the Board were present excepting Doctors W. O. Thompson and Charles H. Lerrigo. All the members of the advisory board were present excepting Professors F. O. Marvin and E. H. S. Bailey. The only member of the conferees present was Mr. J. A. Kimball.

The minutes of the last quarterly meeting were read and approved and ordered placed on file, after which the secretary made his annual report of the work of the Board for the past year, whereupon the president took up the recommendations made in the secretary's report.

The Board concurred in the secretary's effort to secure some effective means and measures adopted by the packing houses of the state, whereby effective physical examination of all employees handling food products shall be made to determine whether or not such employees are free from infectious diseases, especially tuberculosis, and that such examination should be made semiannually, and instructed the secretary to continue his efforts in that direction.

The Board unanimously approved of the circular letter sent out to wholesale grocers under date of April 8 condemning the use of so-called "swells" in canned food products.

The Board indorsed the action of the secretary as outlined in the correspondence between Dr. Thomas R. Crowder, superintendent of sanitation for the Pullman Company, and the department, to the effect that the common cup or glass can not be supplied to patrons on trains upon request of porter.

The Board unanimously adopted the resolutions offered at the annual meeting of state and territorial health authorities with the Public Health and Marine Hospital Service, at Washington, June 1, which resolutions are as follows:

"1. That the health authorities of the states, territories, and insular possessions of the United States, including the District of Columbia, shall notify the surgeon general of the Public Health and Marine Hospital Service immediately, by telegraph (collect) and letter, upon the occurrence of a case or cases of cholera, yellow fever, typhus fever, plague or Rocky Mountain spotted or tick fever, giving the number and location of cases, and that said authorities shall render monthly reports of the number of cases notified of smallpox, leprosy, scarlet fever, measles, diphtheria, typhoid fever, poliomyelitis, cerebrospinal meningitis, dysentery, Rocky Mountain spotted or tick fever, and other diseases notifiable in their respective jurisdictions; said monthly reports to be made on or before the 20th day of each month for the preceding calendar month, and

to give the distribution of cases of smallpox, leprosy, poliomyelitis, cerebrospinal meningitis, Rocky Mountain spotted or tick fever and typhoid fever by counties, or by counties and cities, or by towns (townships), or by towns (townships) and cities; and that when in a state one or more cities are excepted by statute, charter, or otherwise from reporting the occurrence of the notifiable diseases to the State Department of Health, and the state report therefore is exclusive of cases occurring in such cities, the cities thus excluded shall be enumerated.

"2. That upon the occurrence of an unusual outbreak, or in the event of a sudden increase in the number of cases of smallpox, scarlet fever, diphtheria, typhoid fever, poliomyelitis, cerebrospinal meningitis, or Rocky Mountain spotted or tick fever in any locality, the surgeon general of the Public Health and Marine Hospital Service shall be immediately notified, by telegraph (collect) and letter, of such unusual outbreak or sudden increase.

"3. That in the primary notification of smallpox to local health authorities the date when the patient was last vaccinated and whether the disease is of the benign or virulent type shall be stated; that in all outbreaks of smallpox in which one or more deaths occur a report of such data as can be obtained regarding the origin of the first case or cases and the history of the outbreak shall be made to the surgeon general after the subsidence of said outbreak; that all reports of cases of smallpox made by the state or other health authorities to the surgeon general shall be divided into four classes:

"(a) Those vaccinated within a period of seven years preceding the attack.

"(b) Those whose last vaccination occurred more than seven years antedating the attack.

"(c) Those who have never been successfully vaccinated.

"(d) Those in which no definite history is to be obtained.

"4. That in reporting the occurrence of cases of leprosy such data as it is possible to obtain regarding the patient's history shall be given.

"5. That the surgeon general shall, under the direction of the secretary of the treasury, pursuant to section 4 of an act approved February 15, 1893, entitled 'An act granting additional quarantine powers and imposing additional duties upon the Marine Hospital Service,' compile and publish the reports forwarded in compliance with the foregoing in the Public Health Reports, for the information of the health authorities of the several states, territories, and insular possessions, including the District of Columbia."

The rules and regulations presented by the State Board of Embalming, and which were presented to the members of the Board by mail for their approval, were formally and unanimously adopted and made official.

The application of the manufacturer of the Thornton drinking device as to whether or not it could be utilized in public places in lieu of the common drinking cup was discussed, and the secretary was instructed to correspond with the manufacturers and state that the Board would be glad to give the device a bacteriological test if installation was made at some point where the bacteriological department could conveniently make such test.

The committee on food standards made the following report, which was unanimously adopted:

"I. We endorse the secretary's action in reference to swelled canned goods and hold in abeyance the matter of springers. It is understood that neither springers or swells may be sold, in the case of canned meats or fish or other animal food products.

"II. In reference to the communication from bottlers regarding imitation diluted fruit juices, the standards committee recommend that paragraphs 6 and 7, section F, beverages, remain unchanged."

Doctor Haughey, of the tuberculosis exhibit, submitted the following report:

To the Honorable State Board of Health:

I desire to submit the report of the tuberculosis lectures from November, 1911, up to the present date.

Prior to June, 1911, practically all county-seat towns had been visited by Doctor Emley with the tuberculosis exhibit, so that very few towns over 1000 remained to be visited, and as the exhibit, because of its size, necessitated at least two days in order to set up exhibit and then tear down Doctor Crumbine decided it would not be advisable to carry the exhibit in visiting towns of from 400 to 800 population.

So the work this year has consisted in a lecture of approximately two hours' duration on "Tuberculosis, its Cause, Prevention and Cure," a part of the lecture being illustrated with stereopticon views and moving pictures. In this way we were able to reach many more people and cover a much larger territory than could possibly have been covered while carrying the exhibit.

Since the first of January, 1912, there has been added to the equipment one new Edison moving-picture machine and one new film of moving pictures entitled "The Awakening of John Bond," giving us three films available for use in the work, so at the present time we have an unusually fine equipment, making possible as fine an exhibit of motion pictures as can be seen in any city. These motion pictures, which have been featured in the advertising matter, have been an important factor in drawing the large crowds which have everywhere been in attendance at the lectures.

Except on one or two occasions, a remarkable amount of interest has been shown, not only in this campaign against the "great white plague," but in the work of this Board along all lines for the betterment of public health, and generally we have received hearty coöperation from everyone with whom we have come in contact.

With the possible exception of one dozen towns, every city and village of 400 or over in this state has been visited or has been offered the lecture; in a few instances, on account of some previous attraction the city could not arrange for the date offered, and wherever possible such towns were visited later.

One lecture a day for the public was given at eight P. M., generally in the largest public hall in the city, and at these evening meetings the hall was generally taxed to hold the crowds assembled, standing room often being at a premium. In the afternoon a talk on the general subject of health was given at the school building or in the high school for all classes above the fourth grade, the special subject of tuberculosis being touched upon.

At the evening lectures, for 142 meetings we had an average approximate attendance of 275, and when the average population of the towns visited was approximately 500, the proportionate attendance speaks well for the interest being shown. The school attendance, in most cases, would equal the evening attendance; so, taking a conservative estimate, between 75,000 and 100,000 people heard something on the great white plague.

I consider the Board fortunate in securing the services of Mr. Jones as operator for the machine; he is a thorough advertiser and an unusually expert motion-picture operator.

Everywhere we heard expressions of approval from the laity, profession and press for the State Board of Health and Doctor Crumbine for their tireless, progressive campaign for the betterment of our state's health.

The work should be continued until everyone in the state has had an opportunity to hear of this terrible plague, for it is only through publicity and education of the public along the lines of prevention that we can hope to cope with the dreaded disease.

Appreciating the interest being shown and the necessity for the continuation of this work, I close this report with a plea for an appropriation from the next session of the legislature for a continuance of this campaign against the great white plague.

Respectfully submitted.

LEO. HAUGHEY.

Tub. Lecturer for the State Board of Health.

Professor Willard, food analyst, submitted the following report:

ANNUAL REPORT TO STATE BOARD OF HEALTH.

By J. T. WILLARD, Food Analyst, and C. A. A. UTT, Assistant Analyst.

The samples analyzed for the State Board of Health have probably not been as numerous the past year as in some of the previous ones. As in previous years, considerable time has been given to research work in connection with the food analyses.

The tests made include six samples of butter, 77 of milk, 41 of evaporated milk, 50 of ice cream, 5 of meat, 27 of lard, 20 of oysters, 25 of mincemeat, 6 of flour, 2 of gluten flour, 12 of buckwheat flour, 2 of whole wheat flour, 20 of graham flour, 8 of rye flour, 22 of pies and pie fillers, 10 of canned pears, 4 of canned tomatoes, 8 of canned corn, 15 of ketchups, 15 of pickles and relishes, 3 of cider, 60 of vinegar, 15 of extracts, and 24 miscellaneous samples.

The research concerning the molds, yeasts, bacteria, etc., in commercial ketchup has been continued. I would recommend that a standard be established concerning this article.

Investigation was conducted upon a method of determining the fat in condensed milk.

An investigation was conducted on a method of ascertaining whether graham flour as put upon the market is true to name, or whether it consists of some sort of an artificial mixture of bran, shorts, low-grade flour, etc. This investigation is not entirely completed, but has yielded very satisfactory results. It consists in putting the suspected flour through a system of sifting, accompanied by an examination of the parts separated to see whether they are of a character that would be produced by simple grinding, such as would be done with the genuine graham, or whether they have the characteristics of the finished by-products of ordinary milling.

An investigation is also in progress to discover a means by which to pass upon mincemeat with reference to the percentage of meat present. This is based upon the percentage of nitrogen in the mincemeat, and results thus far are very encouraging.

Mr. Utt has been called upon to testify in six court cases.

Respectfully submitted.

J. T. WILLARD.

Professor Sayre, drug analyst, then followed with his report, as follows:

DRUG LABORATORY REPORT.

During the year beginning April, 1911, six hundred samples have been examined in the drug laboratory. Besides the official preparations, such as ointments, tinctures, elixirs, liniments, etc., about fifty samples of linseed oil, several samples of turpentine, fifteen samples of intoxicating beverages, samples of coffee, spices, patent medicines and insecticides have been examined. The drug laboratory has also been called upon in eight cases of suspected poisoning.

Most of the samples were sent in by the drug inspectors, but many

samples have been received at the laboratory directly from the person interested, or, in not a few instances, from the parties indirectly, through other departments of the university.

Special attention has been given, during the last three months, to work on linseed oil. About 40 per cent of the samples of linseed oil picked up at random by the inspectors were found to be adulterated, while practically all samples that were picked up because of their suspicious appearance were found to be adulterated. The insecticides were examined more for the purpose of determining their efficiency rather than their composition. In the cases of suspected poisoning, the experience of our laboratory has been like many other chemical laboratories—that the idea of the presence of poison was due to the unhealthy imagination of some individual. However, this is not always true, and rather serious cases of poisoning have come under our investigation. As a factor in the enforcement of the prohibitory law, the drug laboratory has received and passed upon several samples of intoxicating beverages; this class of samples being received from city health officers, prosecuting attorneys, and others interested in the enforcement of the prohibitory law. Samples of this nature are sent more and more each year through the regular channels of the State Board of Health.

Doctor Greenfield, bacteriologist, made the following report:

Total number of specimens examined since July 1, 1911.....	2,523
Number of specimens of sputum	1,555
Number of specimens of blood for Widal	274
Number of suspected diphtheria	473
Number of water for <i>Coli communis</i>	149
Number of suspected gonorrhœa	30
Number of suspected rabies	24
Number of suspected meningitis	16
Number of positive examinations:	
Sputum	325
Diphtheria	146
Blood	96
Gonorrhœa	11
Rabies	9
Meningitis	7
Water giving fermentation test.....	50

Professor Jackson submitted an oral report on the work of the food laboratories at the University.

Professor Sherwood made a partial report on the examination of drinking water on railroad trains, and the Board, upon motion, instructed the continuance of the work until completed.

Doctors Sippy and Kenney, who have been doing special work for the State Board of Health in the enforcement of the tuberculosis notification law and in studying the incidents of the disease in cities of the first class, made interesting and valuable reports of their work, stating that written reports would be made later.

Adjournment was then made until nine o'clock A. M., June 7.

The Board met in the office of the secretary, Friday morning, June 7, a quorum being present, when the subject of swelled canned goods came up for discussion.

The special committee on headache preparations then made its report, which, upon motion, duly seconded, was adopted and ordered published in the BULLETIN, and it was so published in the June issue.

Professor Hoad, engineer, made his report for the division of water and sewage.

The special committee on time limit for quarantine of scarlet fever made its report as follows:

To the State Board of Health:

GENTLEMEN—We, your committee appointed to consider a minimum quarantine for cases of scarlet fever, beg leave to report the following:

We recommend that minimum of absolute quarantine be fixed at twenty-eight days, and that a further modified quarantine of ten days be maintained, in which patient shall not be permitted to attend school or other public places.

Whereupon the report was unanimously adopted and ordered to be published, and it was published in the June BULLETIN.

The Board, under the provisions of the law, being empowered to fix the salary of employees under the vital statistics law, fixed the salary of the state registrar at \$2100 per annum, beginning July 1, 1912.

The reports of the special committees on inspection of state institutions were then made, the first being made by chairman, Doctor Walker, on the Mother Bickerdyke Home, the Girls' Industrial School at Beloit, and the State Normal School at Hays.

Doctor Alexander then gave report on the state penitentiary at Lansing, as follows:

To the State Board of Health:

GENTLEMEN—Your committee, appointed to investigate the sanitary condition of the penitentiary at Lansing, visited that institution on Friday, May 24, and hand you herewith report of inspection made on that date.

Arriving just before the dinner hour, we first investigated the dining room and kitchen, and, of course, the food. The last was apparently abundant, well cooked and nutritious, while an examination of the bills of fare for several successive days revealed such changes, from time to time, as to afford, on the whole, a well-balanced ration. The dining room and kitchen are well kept for the most part, but flies were a little too numerous, and a little closer attention to screens was recommended. The floors are of cement, rough of surface, and divided into squares by the usual unsightly and uncleanable gashes. Evidently, reasonable efforts are put forth to keep this surface clean, but for all that it looks dirty, as doubtless it would after any amount of scrubbing.

Your committee advised the use of a good cement paint. This would fill the cracks between the blocks and make the whole floor smoother and therefore more easily cleaned. We found the cell houses well kept and well ventilated, but the cells themselves dark, practically sunless, and altogether too near the idea of the ancient dungeon to conform to the standards of modern civilization.

Moreover, there is no plumbing, and no conveniences such as a man, even a criminal man, confined in a space 4 x 7 feet in size ought to have. There is only one way to cure this and that is to tear them down and build new ones inside the walls. There is a large room at the top of the mine shaft, called, for some unexplained reason, the "cap room" (perhaps because it caps or covers the top of the mine shaft). In it are some long benches, several hogsheads of water and a large number of wash pans. This combination enables the miners, as they come up from their work, to rinse from their bodies the dirt and coal dust which accumulates during the day. This, with whatever waste matter comes from their bodies, falls to the floor, where it wanders about or stands in irregular pools in a not altogether pleasing way among the rough and irregular stones of which the floor is composed. Surely this is distinctly insanitary, and the fact that it is only the top of a coal mine is no good reason why such a condition should exist. Let it be torn up and a properly laid cement floor take its place.

The woman's building is new and therefore modern and up-to-date to a degree—that is to say, the cells are larger and there is very good plumbing. But the cells have no outside windows and bedbugs are troublesome. These last are said to be brought in by new prisoners, and doubtless many are, but there must be some natives, since it is admitted that there are many breeding places—as around the doors and between bricks on the wall. It would seem that by the exercise of a little persistence this condition might be corrected. The kitchen and dining room seem to be all right, except that there is too much rusty tinware and battered and dingy blue granite. Both ought to be replaced by new white granite ware.

The hospital is unsatisfactory as to arrangement and wholly inadequate as to the needs of the institution, but as effective as possible under the circumstances. A new hospital should be built, and because the number of tubercular patients is small, and likely to remain so, the problem of their care could be easily solved by building a pavilion on the roof communicating with a tuberculous section of the building having no direct connection with the rest of the hospital.

About the only thing to interfere with this roof pavilion idea is the smoke from the big chimneys, but this can be easily remedied by building the chimneys higher, a thing which ought to be done anyway, for the good of all connected with the plant. We believe the increase in height should be not less than twenty feet.

The water supply of the institution is from wells on the river bottom, located at a point where there is no danger of overflow, and appears to be entirely satisfactory both in quantity and quality.

There is a well-built dairy barn on the grounds. It has too few windows, and is, therefore, a bit dark. Whether this is due to a miscalculation on the part of the builders, or the result of a deliberate design to make the interior less attractive to flies (an old idea) is not known. But in any event, with our better modern ways of disposal of the fly nuisance, a few more windows would be a decided improvement. Even so, there are too many flies about; a condition, however, which is to be remedied by a more frequent removal of the manure.

Taken as a whole, your committee finds the condition of the penitentiary most commendable and a credit to the zeal and good judgment of those in authority. Many things were noted, some of them having no direct bearing on health matters, which we believe mark a distinct advance in prison management. Yet some of these, such as the daily half hour of baseball and other recreations, are surely conducive to good health. Moreover, in these games the prisoners are to an extent put upon honor, so that physical force and moral stamina are both cultivated at the same time. Another feature which is not without something to commend it is field work (gardening) for women. This is not compulsory, but is gladly taken by many prisoners as a relief from the monotony of the sewing room. A night school with a good attendance

is conducted, and is highly appreciated by many, and is surely a great factor in the fitting of men to lead respectable lives after release.

One interesting thing about the institution, which is not generally known, is its relation to the local government of the village of Lansing. The town which has grown up about the penitentiary contains a population of about 1200 and has never been incorporated. It is, of course, under the usual township government, but this is insufficient for all the needs of such an aggregation of people, and so the warden, by common consent, is acting mayor of the city. Does some thoughtless or overwrought individual disturb the peace of its citizens? They telephone the warden, who promptly responds with the indicated remedy. Through him, also, the predatory cow, the insecure sidewalk, and the rest of the usual village nuisances are abated. In like manner, he puts out their fires, advises them about their water supply and their street grades, and, in general, exercises a paternal oversight of the villagers and their affairs; and the arrangement appears to work well and to satisfy the people; for though they have repeatedly been urged to incorporate, they still cling to the simpler way. So, if they are satisfied, and if the village and penitentiary can work together to the advantage of both, who shall object?

B. J. ALEXANDER.
S. J. CRUMBINE.

Whereupon, following the reading of the reports of institution inspections, the Board, upon motion, instructed that copies be sent to the heads of the state institutions inspected, which has been done.

The annual election of officers was then taken up, which resulted in the following:

For President for the ensuing year, Dr. H. L. Aldrich, of Caney.

For Vice President, Dr. V. C. Eddy, of Colby.

For Secretary, for a term of four years beginning July 1, 1912, Dr. S. J. Crumbine.

Upon motion, the present members of the advisory board were all reelected for the ensuing year.

Upon motion, additional members of the advisory board were elected, namely, Prof. F. W. Blackmar, sociologist, and Mr. J. Floyd Tilford, assistant chief food and drug inspector.

The Board then went into executive session, after which, no further business appearing, upon motion the Board adjourned to meet upon call of the secretary.

The following bills were audited and allowed:

Prof. H. L. Jackson.....	\$1.68
Prof. C. A. Utt.....	5.43
Prof. G. N. Sherwood.....	13.31
Prof. L. D. Havenhill.....	1.43
Dr. B. J. Alexander.....	27.51
Dr. V. C. Eddy.....	37.92
Dr. Clay E. Coburn.....	13.20
Dr. O. D. Walker.....	78.32
Dr. C. W. Reynolds.....	18.03
Mr. J. A. Kimball.....	12.31
Hon. C. D. Welch.....	18.09
Mr. A. E. Stevens.....	1.08
Mr. G. N. Watson.....	1.43
Dr. H. L. Aldrich.....	27.86
Dr. M. F. Jarrett.....	22.85
Dr. J. T. Willard.....	19.88
Dr. W. O. Thompson.....	25.40

DIVISION OF FOOD AND DRUGS.

REPORT COVERING PERIOD FROM JANUARY 1, 1911, TO JULY 1, 1912.

TO THE SECRETARY OF THE STATE BOARD OF HEALTH—This report, covering the work of the food and drug division of the department of the State Board of Health, includes all of the work coming under the food and drug law and the sanitary law, covering the handling of these products, together with the weights and measures and hotel law and linseed oil, enforcement of which is with this department.

FOOD AND DRUGS.

The work for this time, coming directly under the food and drug law, shows approximately the same volume of work being done by the department as for the preceding two years. During 1911 there were 10,419 inspections reported by the inspectors, records of which are permanently filed. This does not include hundreds of minor inspections and complaints investigated which were not of enough importance to report; neither does it include investigations by the county health officers of complaints referred to them by the department. During any year there are several hundred of these, and it is safe to say that a total of all inspections made by representatives of this department will show a total of at least 15,000.

For the six months of this year there have been 6380 inspections reported by the inspectors, or in all at least a total of 8500 inspections for the past six months.

The coming year should be our record year, unless we are at the end of the year forced to have our inspectors go more slowly, and be unable to take up much of the work that has been planned, owing to the reduction of the appropriation providing for their expenses.

During the past eighteen months there have been 991 analyses of food products reported by our chemists, of which 486 were found illegal. These samples represent all classes and kinds of foods being sold in the market, and as in practically all cases only samples of questionable goods are taken, it will be readily seen why so many of these are illegal. In other words, a comparison of the several years' work shows plainly the great improvement in the products now being sold in the market in the quality and correctness of labeling, and in approved methods under which they are being handled and sold. A large number of these were samples of alumed-pickled goods, found mostly in the northern part of the state and coming from Nebraska houses. Correspondence was had with these houses, and we have reason to believe that there are at this time practically no alumed-pickled goods in this state. It was necessary, however, to bring a few prosecutions against the sellers of these goods before they seemed to realize fully that the department intended to prohibit their sale.

The various classes of goods sampled, and an idea as to the condition in which food products are now found in the market is more clearly shown in the table which will follow, giving analyses of food products during the past six months.

There have been 470 drug products analyzed and reported, and it was found that 222 were illegal either on account of adulteration or misbranding.

The number of illegal goods here given does not include those products for which there is no standard, yet the analyses showed a wide variation from the analyses of the freshly prepared product made according to the requirements of the U. S. Pharmacopœia; analyses of old stock, deteriorated and misbranded goods are likewise not included.

It was found, for instance, in the analysis of tr. of nux vomica that there were four of these above the required standard and fourteen below, one sample containing no strychnine whatever. The samples of tr. of aconite analyzed, fifty-nine in all, showed these products to be less than one-half the required strength, some of them running down to practically nothing.

Products for which no standard was given in the Pharmacopœia, but showed a great variation from that of a standard U. S. P. product freshly prepared in the laboratory, as tr. of kino, tr. of lobelia, beef, iron and wine, and elixir of iron, quinine and strychnine—these goods showed a wide variation from the solid content and in alcoholic content, as did also the pepsin preparations, 31 of which were found not to meet the required standard. In one case it was found that calomel and santonin tablets, sold as containing one-fourth grain santonin and one-eighth grain calomel, contained one-half grain santonin and one-fourth grain calomel.

The report of the analyses, both for the food and drug laboratories, does not include a great number of products that go to them of which no report is made. These are samples that are sent to them for investigation, or a line of goods simply for our own investigation, in order that we may more thoroughly know what is in the market and how such goods are being put out. These reports include only legal samples, procured by the inspectors, that were taken with a possible view of prosecution or to enable us to obtain the necessary information to show the dealers or others why it is absolutely necessary that they should give special attention to any particular line of goods they are handling.

The following report shows the result of analyses of foods and drugs reported by our chemist from January 1 to July 1, 1912:

Food Analyses Reported From January 1, 1912, to July 1, 1912.

<i>Sample.</i>	<i>Number of Samples.</i>	<i>Passed.</i>	<i>Illegal.</i>
Apple butter	6	6	..
Baking powder	6	4	2
Beverages	3	3	..
Butterine	1	..	1
Catsup, tomato	15	..	15
Ciders	2	..	2
Corn, canned	2	2	..
Codfish	1	1	..
Coffees	2	1	1
Currants, Canned	1	..	1
Essence of Jamaica ginger, sol.	1	1	..
Extract of lemon	7	1	6
Extract of vanilla	12	7	5
Extract of pineapple	1	..	1
Extract of strawberry	1	..	1
Extract of cinnamon	1	1	..
Evaporated fruits	2	..	2
Maple flavor	2	2	..
Flour	3	..	3
Flour, buckwheat	12	11	1
Flour, gluten	1	1	..
Flour, graham	2	1	1
Flour, graham	27	16	11
Grape juice	1	1	..
Horse radish	1	1	..
Ice cream	44	24	20
Ice-cream cones	2	..	2
Jellies and jams	8	3	5
Lard	14	6	8
Meats	3	3	..
Milk	2	..	2
Milk, evaporated	17	16	1
Mince-meat	13	3	10
Olive oil	10	9	1
Onions, pickled	1	..	1
Oysters	18	18	..
Pineapple, canned	1	..	1
Peanuts, salted	2	2	..
Pecans	4	..	4
Pistachio nuts	1	1	..
Pears	7	7	..
Pop	1	..	1

Sample.	Number of Samples.	Passed.	Illegal.
Peas, canned	2	2	..
Pickles	18	1	12
Pies and pie fillers	18	4	9
Preservatives	2	1	1
Preserves	6	1	5
Peaches	1	..	1
Rice	1	..	1
Sugars	22	18	4
Syrups	1	..	1
Tomatoes, canned	†101	21	1
Vinegar	7	1	6
Totals	434	198	155

* Doubtful. † Investigating.

Drug Analyses Reported from January 1, 1912, to July 1, 1912.

Sample.	Number of Samples.	Passed.	Illegal.
Acetic acid	10	7	3
Aqua ammonia	1	..	1
Bay rum	3	3	..
Boric acid	1	1	..
Blue ointment	8	8	..
Elixir of I. Q. & S.	3	1	2
Essence of Jamaica ginger	2	..	2
Essence of peppermint	10	7	3
Fluid extract of gelsemium	6	6	..
Hydrogen peroxide	21	18	3
Lime water	1	1	..
Liquor potassii arsenitis	2	2	..
Mineral water	1	..	1
Opium	6	..	6
Patents	7	3	4
Pepsin preparations	8	1	7
Oil of sassafras	1	1	..
Seidlitz powders	1	1	..
Spirits of ammonia, aromatic	5	1	4
Spirits of anise	1	1	..
Spirits of camphor	12	7	5
Spirits of nitre	3	2	1
Tr. of aconite	1	..	1
Tr. of capsicum	2	1	1
Tr. of Ginger	20	19	1
Tr. of Iodine	3	2	1
Totals	139	98	46
Linseed oil	52	30	22
Turpentine	5	5	..
Totals	57	35	22

During the past year there were approximately 100 samples of vinegars tested in this office and reports made to the parties sending in the samples as to whether or not the product was standard in acid strength.

The method of investigating and fixing the responsibility in the sale of illegal products has been by correspondence direct with the dealers and manufacturers. In fact, a hearing has been given in each case and an attempt made to place the responsibility for any illegal product exactly where it belonged.

For the reason that there are a great many products made by the druggists, there was during the earlier enforcement of the law many more prosecutions brought against druggists than there have been at this time. The druggists, as a whole, at once realized their responsibility in this matter and have endeavored to fully meet the requirements of the law, especially in the matter of the products of their own make. This has resulted in the fact that there are now very few products made by the druggists that are found to be illegal.

If a dealer in a food or drug product can clearly show that he is not responsible in any way for an illegal preparation, and is protected by a guarantee, it has always been the policy of the department, after a

thorough investigation of all the circumstances by personal inspection or by correspondence, to try and clear the market of such illegal goods by cooperating with the dealers, and prosecutions have been brought only where it has been absolutely necessary in order to force the responsibility where it belonged and to free the market of illegal goods.

One hundred prosecutions have been brought for violations of the food and drugs law, all of which have resulted in fines. Records of all cases from January 1, 1912, to July 1, 1912, are herewith appended. (Prosecutions for 1911 were published in the January, 1912, BULLETIN.) Prosecutions for insanitary conditions are not included in this number, but are reported separately, there having been fifty-four during this time, and these comprise complaints against restaurants, meat markets, slaughterhouses, and practically every line of business, and make in all a large part of the total number of prosecutions.

It is undoubtedly a significant fact that during the past eighteen months there have been a large reduction in the number of prosecutions. This is so, I believe, simply from the reason that the merchants are gradually realizing more and more the necessity of complying with the requirements of the law and are putting forth every effort to comply. This, together with the attitude always taken by the department, believing it better to educate the trade in giving them the best possible opportunity to meet the law's requirements, has resulted in a thorough cooperation between the department and practically all lines of trade, and thereby making it necessary for the department to bring only this small number of prosecutions in order to enforce the law.

Our correspondence shows clearly the attitude of the great majority of dealers throughout the state, in that it is constantly growing along the line of inquiries from dealers and all others interested, asking for all kinds of information, thus showing their desire of meeting the requirements regulating the sale and handling of all food and drug products. It is, indeed, a satisfaction to see the spirit of willingness shown by practically all to meet the requirements of the law and to comply at once with all orders and instructions given by our inspectors.

Our system of following up orders given by the inspectors has shown great results: It shows the absolute necessity of meeting the requirements, and does not let the party to whom an order is given forget, as soon as the inspector is out of sight, that he is expected to meet the requirements and notify the department when that has been done. This system has been followed in all cases where it was not felt necessary to make prosecutions, and this plan, together with the same plan being used in the investigation of the sale of all illegal products, has resulted in the great majority of the cases being satisfactorily adjusted without prosecution.

The work previously started in the enforcement of the law as it applies to the sale of eggs unfit for use, thus practically necessitating candling, has been carried on with undoubtedly good results. Last year there were several prosecutions for the sale of eggs unfit for food purposes, and this year our inspectors report that their investigations show the great majority of dealers are candling, buying all eggs on the "loss-off" basis. Up to this time, for this year, no case of a sale of eggs unfit for use has come before the department for prosecution, thus clearly showing the good results that have been obtained in the marketing of this one particular food product.

The question of weed seed and other extraneous matter in wheat, which was taken up a short time ago, has, according to all reports received, been of great benefit to all concerned and is having the heartiest support of all affected, for it is realized that it is a step in the right direction. A year's education as to the requirements of the law in this matter will have the result of practically freeing our wheat of most of this extraneous substance, which it has been shown can be removed.

The matter of the proper labeling of the bottlers' products has been taken up, and it is believed that the bottlers are now in line and that

next year's products will be properly labeled, thus improving this business and giving to it, I believe, a great impetus.

In the matter of sanitary conditions, there is one item in particular to which I wish to invite your attention, and that is to the railroad camps—those places that are being conducted on the order of a boarding-house and clearly come within the meaning of the food and drug law and sanitary law. Two particularly bad cases were reported to the department. After an investigation the matter was taken up direct with the railway company which furnishes the cars and the company which contracts to board the men, and we have their assurance, the work already being started, that all these places throughout the state will be properly screened, put in sanitary condition, and so maintained in the future.

WEIGHTS AND MEASURES.

During the year 1911 there were 204 scales, 110 weights and 57 measures condemned, making a total in all of 731. This does not include a large number of scales, weights and measures that were destroyed and taken up by the inspectors, reports of which were never made on account of these being in such condition that it was impossible that they be fixed, so that the inspectors simply took them up or destroyed them without making a record of the same; also a large number of apothecaries' weights and small avoirdupois weights (approximately 5000), no record of which has been kept.

To show more definitely just what work has been done in enforcing the weights and measures law, the following data, showing some of the work done by one of the inspectors for approximately nine months, is here given. This was in the testing of druggists' scales, weights and measures.

Prescription scales passed.....	523
Prescription scales condemned.....	195
Counter scales passed.....	439
Counter scales condemned.....	10
Graduates passed.....	1,320
Graduates condemned.....	154
Counter weights passed.....	3,607
Counter weights condemned.....	61
Prescription weights passed.....	6,116
Prescription weights condemned.....	5,362

This makes a total of 17,787 scales, weights and measures tested, and a total condemned of 5782.

The reports of the inspectors for the six months of this year show a total number of 5232 scales, 11,245 weights and 3814 measures inspected. Of this number there have been 68 scales, 300 weights and 17 measures condemned. A comparison of these figures with those of former years shows to what a great extent the market has been cleared of scales, weights and measures that were not accurate, not coming within the limit of tolerances. It is to be regretted that we are unable to do more with these, but, as you well know, with our present number of inspectors it is impossible to give this work the particular attention it deserves, other than the inspection of the scales, weights and measures in those places where the inspectors' regular food and drug work take them. It is a fact worth mentioning that when this law first went into effect there were quite a few scales, weights and measures found which were incorrect on account of some special device used to affect the weighing of the scale, or showing evidence of tampering or willfully trying to defraud by using some makeshift in weights that had been bored out and made light; these and other schemes were used to defraud. During the past eighteen months, however, there has not been a case of this kind found in all of the scales, weights and measures condemned, the trouble being more on account of lack of care and their gradual wearing out and not keeping them properly adjusted.

This law has had really a wonderful effect, not alone in getting rid of the false scale and making the giver of short weight and measure correct his method of doing business, but is making everyone feel the necessity of paying attention to these things and maintaining them in proper condition. Many a merchant has found this to his own financial gain.

There have been twelve prosecutions under the weights and measures law, and a list of these, covering the time from January 1 to July 1, 1912, together with a list of all scales, weights and measures condemned, is herewith appended. All prosecutions and condemnations coming under this law in 1911 were published in the January and March BULLETINS for 1912.

HOTELS.

Compared with other years, the hotel work for 1911 was fairly satisfactory. The work so far this year has probably given us the best results we have had, for the reason that the two drug inspectors have been giving particular attention to this work in connection with their regular drug inspection. This has necessarily not allowed them to pay the usual amount of attention to the inspection of drugs, and as a consequence, while one part of our work has been bettered, I believe that the other has suffered. The results obtained in this work have never been satisfactory, for the reason that we do not have the necessary inspectors to give this work the necessary amount of attention.

To depend on the county health officer for these inspections is uncertain, and it has been shown that the desired results can not be obtained in that way. If this work is to remain with this department we should have at least two hotel inspectors, whose work primarily shall be to look after hotels. By such inspection only can the hotel law be properly enforced.

During the past year the matter of hotel inspection was given practically no special attention by this department, with the exception of one period, when all of the inspectors were given certain territories, and for about thirty days devoted their entire time to the work. However, as that was the only time when particular attention could be given to this, and as it was impossible for the inspectors to visit all of the hotels in that time, it was felt that some other system should be devised so that we could so far as possible with our limited field force give special attention to the hotel work. It was therefore decided that for this year the two drug inspectors should devote their time in part to the hotel-inspection work throughout the entire year, cooperating in each county with the county health officer. It will necessitate their traveling a little slower, and will not enable them to cover their territory so rapidly, but we feel that this year special attention should be given to the hotel work and the hotel people made to realize that this law has been in force long enough for them to know that they must comply with its requirements.

The usual letters were written to the county health officers asking for the inspection of the hotels of their county and prompt reports. As a whole, these have been coming in in much better shape. Our two drug inspectors have had opportunity to do some work in most of the counties, and as a result of this cooperation with the county health officer a larger number of reports than usual have been received. These in most cases are only partial reports, but I believe by the end of the year most of the counties will have complete reports. It is the intention to give the county health officer every assistance we can, and this year obtain, so far as possible, complete reports from every county. In some counties, however, the county commissioners refuse to allow the county health officer any pay for doing this work, and as a result the work is not done and we are unable to get the necessary results.

Since the passage of the hotel law, four years ago, there are ten counties for which reports have never been received, and a great many others that have only been partially reported. On account of being unable to give this work the attention it should have, it has necessitated

our spending a much longer time in educating the hotel keepers of the state as to the law's requirements. For that reason we have been slow to bring prosecutions for violations of the law, but have endeavored first to see that everyone was acquainted with the requirements and had had an opportunity to comply. Pursuing this policy, there were no prosecutions brought until in 1910, thus giving the hotels practically two years to comply with the requirements. During that time, however, a large number of hotels were closed. These places were given the choice of closing or standing prosecution. In this manner some of the worst places were put out of business.

In 1911, however, it was found necessary, on account of the conditions, to bring four prosecutions, and now that this law has been in operations sufficiently long for everyone to know thoroughly its requirements, and there is no reason at this time for noncompliance with those requirements, we expect this year to rigidly enforce the hotel law and bring prosecutions against all violators.

This work, then, for the six months of this year shows twelve prosecutions for various violations of the hotel law (a list of which is herewith appended), and hundreds of orders given by our two inspectors detailed on this work, all of which will be closely followed up, and by the end of the year, if we have the assistance we should get from the county health officers, the condition of the hotels, both as to fire-protection, equipment and sanitary conditions, should be greatly improved. There are on record at this time, as reported by the county health officers and our inspectors, 1200 hotels and rooming houses or places coming within the meaning of the hotel law. For this year there have been issued 584 certificates to these places that have complied with the law, and 323 reports have been returned as incomplete. Certificates can not be issued to these until there has been compliance with the requirements. This leaves 293 places on which we have received no report for this year, not including a large number on which we undoubtedly have never received a report.

This department, as you know, has always followed the policy, when circumstances seemed to warrant it, of giving a place of business that was being conducted in violation of the sanitary law the choice of "closing up" until such time as it had been put in sanitary condition, or of standing prosecution. This has resulted in the closing up of a large number of hotels, restaurants, slaughterhouses, and practically all classes of business. Reports on all of these are not available, but there has been reported so far this year a total number of forty-four places closed, of which 14 were hotels.

This does not include the great number of places temporarily closed and required to be "cleaned out" before our inspector leaves town. The inspector is thus enabled to make the second inspection of such places, allow them to reopen if the conditions seem to warrant, and report accordingly.

LINSEED OIL AND TURPENTINE LAW.

This law, passed by the legislature in 1911, has now been in force a year. This time has been spent in educating the trade, so far as we have been able through our inspectors and publication in the BULLETIN, in order to give them time to adjust themselves to the new conditions and comply with the law's requirements. It must be seen at once that this has been a large task for this department, for the reason that linseed oil and turpentine are handled in several lines of business that are not affected by any other law we have to enforce, and as a consequence are never inspected by our inspectors. During the year a large number of samples have been collected and the analysis of these reported in the BULLETIN. This law, together with an explanation and advice as to the law's requirements, was also published, and it is now felt that there is little reason why any one should not know and comply strictly with the requirements.

Fifty-two samples of linseed oil and five samples of turpentine have

been analyzed with the following results: Linseed oil, 30 passed, 22 illegal; turpentine, 5 passed, none illegal.

As most of this oil is shipped through interstate commerce, we have no jurisdiction over it until it is received in the state and offered for sale, and as these analyses show these products are adulterated to a great extent, it can be readily seen that it is necessary for dealers to exercise great care in their buying and *Know* what they are selling.

Taking into consideration all the work done by this department during the past eighteen months, I feel that great results have been obtained. Our inspectors have been covering their territories thoroughly, and by hard, earnest work have been getting "results," and what is to be more appreciated than anything else is the fact that in the enforcement of these laws the different lines of business most affected are the ones asking for their enforcement, and are ever ready to stand back of the department in helping to make them as effective as possible. It is a protection to all legitimate business.

Respectfully submitted. J. FLOYD TILFORD,
Asst. Chief Food and Drug Inspector.

FOOD AND DRUG PROSECUTIONS TERMINATED, JANUARY 1 TO JULY 1, 1912.

Name, address, case and termination.

Joseph Baer, Beattie, eggs unfit for food. Minimum and costs.
A. Ballard, Barnes, adulterated vinegar. \$1 and costs.
Sherman Pettit, Horton, adulterated vinegar. \$10 and costs.
W. A. Puteamp, Horton, colored and polished pecans. \$10 and costs.
Gus Vasilas, Coffeyville, unprotected candy and dates. \$5 and costs.
W. A. Karbe, Pittsburg, unprotected food products. \$5 and costs.
H. M. Fleming, Pleasanton, misbranded and adulterated powdered sugar. Minimum and costs.
E. A. Drollinger, Wichita, adulterated milk. \$12.50 and costs.
J. N. Jurgens, Wichita, adulterated milk. \$15 and costs.
E. A. Drollinger, Wichita, adulterated milk. \$12.50 and costs.
Pat Conley, Wichita, adulterated milk. Dismissed upon payment of costs.
C. H. Dobbs, Emporia, keeping for sale food which was deleterious to health. \$5 and costs.
Pearson Brothers, Osawatomie, selling coated rice. \$1 and costs.
New York Mercantile Company, Beloit, misbranded lemon extract. \$5 and costs.
Chas. Strohman, Waldo, sale of rotten eggs. \$1 and costs.
Geo. H. Dunsmore, Long Island, pickles processed with alum. \$10 and costs.
C. W. Granger, Vermilion, adulterated vinegar. \$1 and costs.
N. S. Flack, Blue Rapids, adulterated vinegar. \$5 and costs.
John Doe (name unknown), Sumner county, rotten fruit from car. Fine and costs.
O. B. Dokam, Parsons, misbranded maple syrup. \$5 and costs.

PROSECUTION OF INSANITARY PLACES, 1912.

Walter Bell, Coffeyville, insanitary refrigerator. \$5 and costs.
M. L. Probst, Pittsburg, insanitary refrigerator. \$5 and costs.
Geo. Lieser and J. W. Nash, Hutchinson, insanitary grocery store. \$10 and costs.
S. J. Maxley, Solomon, insanitary conditions. \$10 and costs.
J. L. Shaffer and S. S. Demetz, Washington, insanitary slaughterhouse. \$10 and costs.
N. M. Hartwell, E. E. Knox and M. N. Lenpold, Frankfort, insanitary slaughterhouse. \$5 and costs.
E. Matthewson, Hiawatha, dirty slaughterhouse. \$10 and costs.
John Bohner, Hiawatha, dirty restaurant. \$10 and costs.
M. F. Mallinowsky, Hiawatha, dirty bake shop. \$10 and costs.
A. M. Cryderman, Neodesha, insanitary slaughterhouse. \$50 and costs.
L. E. Howarth, Atchison, insanitary grocery store. \$10 and costs.
C. V. Jacobs, Atchison, insanitary bakery. \$10 and costs.
E. C. Overmiller, Atchison, insanitary bakery. \$10 and costs.
W. D. Mark, Holton, insanitary restaurant. \$32 and costs.
Harner, Hanseman & Mace, Clay Center, insanitary slaughterhouse. \$10 and costs.
Lawrence Caine, Independence, insanitary slaughterhouse. \$5 and costs.
J. L. Goodman, Galena, insanitary restaurant. Fine and costs.
Cyrus Leland, jr., Troy, insanitary slaughterhouse. Dismissed.
Julius Shaeffer, Wichita, insanitary restaurant. \$15 and costs.
Pat Oliver, Wichita, insanitary restaurant. \$15 and costs.
See list (21 cases), Emporia, barber shop. Each barber \$5 and costs.

HOTEL PROSECUTIONS FOR 1912.

Wm. Stelter, Hoisington, hotel law. \$50 and costs.
 Mrs. Earl Werner, and Mr. and Mrs. W. H. Baldwin, Wichita, short sheets and non-compliance fire-protection requirement. \$20 and costs.
 Ernest Bertschinger, Mrs. Getts and J. Plasterer, Wichita, hotel insanitary; blind rooms. \$20 and costs.
 J. C. Willis, Wichita, hotel insanitary, and noncompliance fire-protection requirements. \$20 and costs.
 Mrs. Florence Moore, Wichita, insanitary hotel, and noncompliance fire-protection requirements. \$20 and costs.
 J. Frank Baker, Ellsworth, dirty kitchen. \$10 and costs.
 Cora Steffins and Mrs. W. S. Parris, Wichita, hotel. \$10 and costs.
 W. C. Kemp, Wichita, hotel. \$10 and costs.
 C. S. Harrington, Wichita, hotel. \$20 and costs.
 J. P. Johnson and L. M. Miller, Wichita, hotel. \$20 and costs.
 Emma Henderson, Arkansas City, hotel. \$10 and costs.
 Jacob Foster, Abilene, common towel. \$10 and costs.
 Frank Hobart, Glen Elder, fire-protection law not complied with. \$50 and costs.
 Tom Ferson, Pittsburg, dirty kitchen. \$5 and costs.
 Guy McCandless and J. J. McCandless, Wichita, blind rooms and short sheets. \$10 and costs.

WEIGHTS AND MEASURES PROSECUTIONS, 1912.

J. E. Kinney, Arkansas City, short-weight bread. Minimum and costs.
 John Stook, Topeka, short-weight apples. \$5 and costs.
 Oswego Seed and Grain Company, Oswego, short weight chops. \$5 on each count.
 J. M. Davison, Everest, short-weight bread. \$10 and costs.
 French Johnson, Cheney, short-weight bread. \$10 and costs.
 James Kelley, Chanute, short-weight apples. \$15 and costs.

SCALES, WEIGHTS AND MEASURES CONDEMNED, 1912.

January:

Theo. Meinke, Linwood. 1 counter platform scale.
 Corum Brothers, Munsey. 1 counter platform scale.
 Young & Richardson, Havensville. 1 hanging meat scale.
 G. F. King, Holton. 1 even-balance scale.
 Hinness Sons, Holton. 1 even-balance scale.
 John Kauls, Holton. 1 even-balance; five weights.
 M. M. Manion, Humboldt. 1 platform scale; 1 50-lb. weight.
 Baker & Stephens, Erie. 1 computing scale, 7 weights.
 L. W. Wilmoth, Mound Valley. 1 peck bottomless measure; ½-peck bottomless measure.
 G. H. Dieterich, Altamont. 1 Stimpson computing scale; five weights.
 G. P. Roberts, McCune. 5 weights.
 C. F. Webb & Co., Toronto. 4 weights.

February:

H. Garland, Fredonia. Hanging counter scale.
 Learning & Vogeli, Fredonia. Dayton computing scales; short weight.
 Artimee & Garcia, Neodesha. American platform scale.
 Adam Loch, Chanute. 1 bottomless measure.
 Frank H. Burnett, Benedict. 1 cup pint measure.
 B. Brann, Michigan Valley. 1 spring scale.
 Missouri Pacific Railway Company, Overbrook. 1 stock yards scale.
 H. G. Wengerd, Navarre. 1 Stimpson scale No. 700,877.
 A. B. Hamacher, Sabetha. 1 hanging meat scale.
 John Kaul & Sons, Holton. 1 even-balance iron.
 W. Y. Olmstead, Garnett. 1 Px. scale; full set Px. weights taken up.
 Ferril Drug Company, Chanute. 10 Px. weights.
 J. M. Holzappfel, Colony. 1 Px. scale; 5 Px. weights.
 Doctor Taylor, Caney. 6 Px. weights.
 Farnsworth Drug Company, Hoisington. 1 Px. balance.
 C. E. Holmes, Great Bend. Px. balances.
 J. A. Stockenberg, Lindsborg. Metric Px. weights.

March:

City Drug Company, White City. 1 Px. scale; 4 Px. weights.
 Jas. G. Durham, Douglass. 1 Px. scale; 7 Px. weights.
 Ford Bolton, Towanda. 1 prescription scale. 5 Px. weights.
 P. E. Holmes, Douglass. 4 Px. weights.
 Mr. Ireland, Wellsville. Px. scale.
 Parkers Pharmacy, Kansas City. 1 Px. balance.
 W. C. Butts, Kansas City. 1 Px. balance.
 Geo. H. Fells, Independence. Dayton counter candy scale.
 W. M. Bulmer, Independence. 1 bottomless peck measure.
 C. A. Weaver, Independence. 1 bottomless peck measure.
 E. E. Bowen, Monrovia. 1 iron platform counter scale.
 D. Richter, Effingham. 1 National automatic computing hanging meat scale.
 J. W. Keats, Farnell. 1 even-balance scale; 3 weights.

March:

J. H. Ryan, White Cloud. 1 Turnbull platform scale.
 Wm. Ward, Severance. 1 hanging meat scale.
 Wm. W. Erskine, Wathena. 1 computing meat scale.
 Cawood Brothers, Wetmore. 1 Turnbull platform meat scale.

April:

F. P. Barrett & Son, Atchison. 6 weights; poise on one scale.
 W. H. Avensberg, Atchison. 4 weights.
 John Flemming, Atchison. 1 weight.
 E. Ebner, Atchison. 6 weights.
 Chas. H. Helper, Frankfort. 5 weights.
 Barrett & Wasman, Frankfort. 4 weights.
 G. A. Kircher, Centralia. 1 "Elkart" spring computing scale.
 Wm. Mienarin, Home. 1 hanging spring meat scale.
 Chanute Grain Company, Chanute. 8 measures.
 Dewey & Hessel, Cheney. 1 cup measure.
 H. N. Holcomb, Castleton. Two cup measures.
 Schwartz & Albright, Pretty Prairie. 1 cup measure.
 E. C. Beal, Clearwater. 1 Px. balance.
 W. P. Ball, Longton. 1 Px. scale.
 Norman E. Engle, Manhattan. 1 Px. balance.
 Arthur C. Brown, Osage City. 1 Px. balance.
 Albert J. Stratton, Reading. 1 Px. scale.
 Grant & Imes, Beagle. 1 equal-arm balance scale.
 Green Drug Company, Green. 8 weights.
 Pioneer Drug Company, Clay Center. 5 weights.
 A. Jennings, Clay Center. 10 weights.
 Fullington & Held, Clay Center. 4 weights.
 Wharton Drug Company, Lyons. 7 weights.
 Lyons Drug Company, Lyons. 4 weights.
 J. E. Smith, Lyons. 7 weights.
 Cook & Dodge, Sterling. 1 weight.
 J. W. Duff, Sterling. 5 weights.
 Palace Drug Company, Geneseo. 10 weights.
 Geneseo Drug Company, Geneseo. 7 weights.

May:

W. E. Keef, Glen Elder. 8 Px. weights.
 Kent-Long Drug Company, Beloit. 9 Px. weights.
 The Corner Pharmacy, Beloit. 5 Px. weights.
 Bunch Drug Company, Beloit. 3 Px. weights.
 J. G. Trueblood, Glen Elder. 9 Px. weights.
 O'Brien Pharmacy, Beloit. 4 Px. weights.
 Baldwin Pharmacy, Osborne. 16 Px. weights.
 J. B. Hatfield, Osborne. 2 Px. Weights.
 Dryden Drug Company, Stockton. 9 Px. weights.
 G. R. Thomason, Stockton. 1 pair Px. scale.
 Mills Drug Company, Portia. 19 Px. weights.
 Palace Pharmacy, Cedar. 3 Px. weights.
 B. H. Hockett, Cawker City. 1 Torison Px. balance.
 W. S. Wuisberry & Co., Cawker City. 5 Px. weights.
 City Pharmacy, Downs. 1 Px. weight.
 Rexall Drug Company, Downs. 2 Px. weights.
 Kirwin Drug Company, Kirwin. 5 Px. weights.
 C. W. Dremer, Edna. 1 5-lb. weight.
 I. M. Sharp, Bigelow. 1 computing spring scale.
 R. L. Tays, Herkimer. 1 counter platform Buffalo scale.
 A. J. Leonard, Blaine. 1 hanging computing scale.
 J. C. Gordon, Westmoreland. 1 Stimpson hanging meat scale.
 Chas. Hofmann, Green. 1 Stimpson Elkhart scale.
 F. O. Fence, Idana. 1 John Chatillon platform meat scale.
 T. J. Nutter, Morrowville. 1 hanging meat scale.
 G. H. Grieve, Longdon. Px. scale.
 Standard Milk Company, De Soto. 1 small platform scale.
 J. H. Grace, Admire. 1 Stimpson scale.
 O. A. Weisman, Hays. 1 Stimpson scale.
 J. L. Dragoo, Quinter. 1 Stimpson scale.
 J. H. Myers, Great Bend. 1-pound scale weight.
 W. L. Curtis, Garfield. 1 K. C. computing scale.
 J. Dillon Mercantile Company, Sterling. 1 Standard computing scale.

June:

J. L. McCormick, Phillipsburg. 5 Px. weights.
 Holmes Drug Company, Phillipsburg. 10 Px. weights.
 Nyal Drug Stone, Norton. 1 Px. weight.
 M. L. Stone, Wamego. Px. scale.
 Verner Alquist, Clay Center. 1 weight.
 H. E. Carter, Clay Center. 1 even-balance iron scale; 3 weights.
 John Hostinsky, Cuba. 1 Dayton scale.
 Jessie Harvey, Meriden. 1 National computing scale.
 Bennett's Bakery, Galena. 4 scales.
 Fred Volz, Galena. John Chattillon butcher's scale.
 Don Moore, Galena. 1 cup measure.

REPORT OF STATE REGISTRAR.

To the State Board of Health: TOPEKA, KAN., August 1, 1912.

GENTLEMAN—After an effort of six years, Kansas has a vital statistics law that in most respects is similar to the model law recommended by the Bureau of the Census, the American Medical Association, and the American Public Health Association. The legislature in passing this act, however, made some minor changes, only one of which was of serious import, and that was in section 4, in limiting the number of registrars to the city clerks of incorporated cities.

This law, chapter 296, Laws of 1911, became effective on July 1, 1911, with an appropriation of \$2500 per year provided by the legislature. It had been estimated that not less than three clerks in addition to the state registrar would be required to do the work of the central bureau. This help could not be provided from the appropriation of \$2500, and it was a matter of earnest discussion among the officials of the department as to whether or not it was wise to put the law into operation. After several conferences with the governor and state auditor it was determined to ask the Board for authority to employ one clerk out of the tuberculosis fund, as the data secured by the operation of this law would be of immense assistance in the enforcement of the tuberculosis registration law, and one clerk to be carried out of the emergency fund. After the securing of this authority and the exercise of other unusual means, it was determined to make the effort to enforce the law, even thus inadequately equipped with help.

Copies of blanks for the use of the local registrars were prepared and sent to the state printer about May 15, but as he was without funds, nothing could be done at that time, and all copy was returned. But promptly on July 1, the beginning of the new fiscal year, they were again sent to the state printer, and on August 9 a portion at least of all of the blanks for the use of the local registrars had been received at this office, and on that date a complete package of supplies was sent to each of the 485 local registrars. By correspondence with the county clerk of each county, a list of the incorporated cities had been obtained, and the state was divided into registration districts surrounding these incorporated towns, as provided by section 3 of the law, the city clerks of which were under provision of the law local registrars. Correspondence was then entered into with these clerks, and they were informed of their duties under the law, and were asked to file their names and addresses with the central bureau.

With the supplies sent to the local registrars were sent the following circular letters and a suggested article for publication in the local papers:

"TO LOCAL REGISTRARS:

"For the purpose of putting into effect the provisions of chapter 296, Laws of 1911, the following suggestions are made to local registrars:

"First, carefully read over the law, rules and regulations, and study their provisions, that you may be enabled intelligently to answer questions which are sure to be asked of you.

"The law provides in section 11 that each physician, midwife and undertaker shall register with you, and shall thereupon receive a copy of the law, together with such rules and regulations, forms, etc., as are to be supplied to them. To secure these registrations is the first step in the enforcement of the law, and it is suggested, where it is convenient so to do, that the registrar make it a point to call upon the parties interested, secure their registration, supply them with blanks, and incidentally secure

their coöperation and good will at the same time. This will undoubtedly make for a much better observance of the law. In any event, these registrations must be secured and the supplies issued as promptly as possible.

"Particular attention should be paid to securing the registration of all midwives. There is no law on the statute books that in any way governs this practice except the vital statistics law, which requires their registration, and prompt complaint should be filed with the county attorney for any practice on the part of these people without registration.

"It is further suggested that the widest possible publicity be given this law in your community through the press, as it will very greatly aid in its enforcement.

"Registrars are only required to register and supply those physicians, midwives and undertakers resident in their district and the cemeteries located within the district; those who practice in the district who reside outside of it will be supplied by their own registrar.

"Keep close track of your supplies and order additional quantities in ample time to supply the demand. Please do not fold certificates; use the large envelopes and send them in *flat*.

"The division of territory prescribed does not in any way affect the practice of physicians and undertakers beyond designating the proper place of registration, and a burial permit issued by any registrar for a death occurring in his district will be accepted by the sexton of any cemetery within the reach of a private conveyance, and a common carrier is not employed for transportation.

"As soon as certificates are received they should be entered in the proper book (birth or death record) and then filed, and on the fifth of the next month carefully checked and a statement made on the proper blank, and all sent in to the state registrar.

Yours cordially,

W. J. V. DEACON. *State Registrar.*"

"Memorandum for Distribution of Supplies.

"Local registrars shall make distribution of supplies for the purpose of putting into effect the vital statistics law, as follows:

"To each physician: One tab birth certificates, one tab death certificates, one copy of the law.

"To each midwife: one tab birth certificates; one copy of the law.

"To each undertaker: one tab death certificates; one copy of the law.

"To each cemetery: one cemetery record; one copy of the law.

"In addition to which the local registrar retains for his own use: No report cards; statement of returns; large addressed envelopes; death-record book; birth-record book; supplemental birth reports; book of burial permits; register of physicians, etc; copy of the law; international classification of causes of death."

Suggested article for publication.

"The vital statistics law, compelling the registration of all births and deaths in Kansas, passed by the last legislature, went into active operation to-day upon the shipment of the registration blanks by the State Board of Health to the 478 registrars of the state. The law went into effect July 1, but the fact that the state printer has been crowded with work has delayed the printing of the blanks. The law specifies that registrations certified on blanks other than those furnished by the state are not legal.

"Registrations are paid for from the general fund of the county, and there is no expense to the householder, the attending physician or midwife or to the undertaker. The fee is twenty-five cents.

"A total of 478 local registrars have been appointed by W. J. V. Deacon, the state registrar. This comprises the city clerks of every incorporated city in Kansas. Each one is also given such territory contiguous to the city as is assigned to him by the State Board of Health. For probably three hundred years civilization has tried to devise some

means of getting a complete and perfect record of deaths. The solution of the problem has been found in requiring a burial permit to be taken out before any disposition is made of the body. The granting of the permit is contingent upon the reporting of the death to the proper officials. This is the keynote of the law. The undertaker has ample opportunity to get the facts concerning the death from the relatives, and other detailed information, and he is required to gather it. The physician, of course, makes the medical report of the death.

"There are three first-class, important reasons, among others, why deaths should be recorded. Named in the increasing order of their importance they are:

"To keep track of the movement of the population, or what is known as the demographic value.

"The sanitary value, which teaches where the plague spots are and gives opportunity for the installation of preventive measures.

"In the legal value importance attaches itself to the information in cases of inheritance by descent, in insurance matters and in the detection of criminal practice. There is no chance to hide away a body and 'forget it.'

"The responsibility for reporting deaths falls upon the undertaker. Heavy penalties are provided in the law for failure to report deaths, and punishment is also provided for failure to take out a burial permit before the body is interred or for permitting interment without a permit.

"Births are to be reported by the physician or midwife in attendance, and in the event of no medical attendance, or if no midwife is present, the father or mother must attend to the registration. A heavy penalty is attached to failure to make the proper report. Kansas at this time has no law regulating the practice of midwives, but the vital statistics law compels them to register, as well as every undertaker and physician, with the local registrar, and penalties are provided for practicing without registering.

"A host of good reasons marshal themselves up for the registration of births. Track can be kept of the movement of population. A large per cent of our practice in the courts requires a definite statement of age. Offenders in certain wrongful actions under the age of twenty-five go to the reformatory. It often costs the state much money to determine these ages. District judges in Kansas have said that the faulty memories of parents often causes much trouble and expenditures in learning the correct ages of the offenders. It is asserted that there are men in the penitentiary to-day because ages could not be proven. On the civil side of the legal phase there are certain cases coming up in relation to property rights in which ages are of great importance. The rights of a minor are maintained in certain instances a year after the age of majority has been attained. Suppose a case appears in which an attempt is being made to cheat an heir out of property where the age is of vital importance. Right there an official authentic record could shape the determination of a whole dispute with no loss of time and no question of accuracy. There are always cases in inheritance where descent and age are necessary and desirable. The courts are continually demanding certificates of births and deaths.

"A striking example of the need of a vital statistics law came up recently in Topeka. A young man and his parents moved back to Europe. The parents were born across the sea, but the son was born in Topeka. The latter desired to come back to Topeka for his education. He landed at Ellis Island, and had just enough money to get to Topeka, and the immigration officers raised the question of his being an indigent foreigner. He insisted that he was born in Topeka, but had no proof of it. Efforts were made in this city to get the facts about the matter, but nothing could be found until Father Hayden became interested in the case. He searched the records of his parish for a week, and finally located the midwife who attended at his birth, and seventeen years after he was born the fact of his birth was registered and he was permitted to enter his

native land. That was a striking example of the need of a vital statistics law.

"There is another argument cited which can not be improved on. For years it has been the custom to register horses, cattle, hogs and other live stock, but the human race has not until now seen fit to spend twenty-five cents for the registration of a birth or death."

In most places registration began at once, as evidenced by the fact that 896 deaths and 136 births were reported for the part month of August. In some localities, however, through misunderstanding or inefficiency on the part of the local registrar, the work was delayed, but before September 1, 1911, registration was general over the state. With the beginning of the actual work of registration the office was flooded with letters of inquiry from local registrars, undertakers, physicians and sextons of cemeteries, resulting in a great burden of correspondence. But as registration got well under way it became more and more apparent that the limitation of the local registrars to the number of incorporated towns was a serious mistake, as in many instances a great hardship was created on undertakers and others responsible under the law, several instances being recited where it was necessary to drive from sixty to one hundred miles in order to comply with all the requirements of the law and secure a burial permit. Seventeen counties have but one registration point, namely: Finney, Geary, Grant, Gray, Haskell, Hodgeman, Lane, Morton, Scott, Seward, Sherman, Stanton, Stevens, Thomas, Trego, Wallace, and Wichita. Of this number, several counties have no incorporated town and arrangement was made for the county clerk to act as local registrar. It will be noted that all of the above counties are large counties geographically. The question of registration is one of area rather than of population, as one registrar can take care of a population of ten thousand quite as easily as he can of one; it is a question of having registrars located at such convenient points that no hardship will be created in complying with the law. So serious did this question become on September 8 the state registrar addressed the following letter to the attorney-general:

"Hon. John Dawson, Attorney-general, Statehouse:

"DEAR SIR—I desire to invite your attention to section 4 of chapter 296, Laws of 1911, which provides that the city clerk in each incorporated city shall be the local registrar of vital statistics. In the operation of the law the unfortunate fact exists that this does not make a sufficient number of registrars in the state to handle the business, and the law creates a great hardship upon undertakers and others concerned in the difficulty of securing the necessary burial permits.

"You will note that by section 1 of this act the State Board of Health is authorized to make rules and regulations for carrying out the provisions thereof, and I desire to ask your opinion as to whether or not a regulation that would permit the city clerks, as local registrars, to appoint deputies in certain localities where needed, said deputies to be subject to the approval of the Board, would be in order. I assume that such deputies would have to act in the name of the local registrar, as there seems to be no provision for the delegation of authority to sign burial permits.

"I will be pleased to have your opinion on this subject at your early convenience. Very truly yours,

W. J. V. DEACON, *State Registrar.*"

To which the following reply was received:

"SEPTEMBER 9, 1911.

"Hon. W. J. V. Deacon, *State Registrar of Vital Statistics, Topeka, Kan.*:

"MY DEAR SIR—Your letter of September 8, 1911, received.

"By section 1 of said statute the Board of Health is authorized and directed to make such rules and regulations, not in conflict with the laws of the state, for carrying out the provisions of the act, and said section makes a violation of said rules a misdemeanor.

"Section 4 of the act makes the city clerk of each incorporated city the local registrar of vital statistics, and he may issue burial permits and receive birth certificates for any part of his county. Nowhere does the act expressly provide that there shall be no other local registrar than the various city clerks, and nowhere does it expressly provide for the appointment of local registrars other than the city clerks. While such local registrars are paid out of the general fund of the various counties, the number of registrars in no case can affect the amount to be paid. If there is only one registrar in a county, and he does his duty, he would receive as much compensation as a dozen registrars would receive.

"I think the State Board of Health has the power and authority to authorize the various city clerks to appoint such assistants as may be necessary to enable them to perform the various duties placed upon them by the provisions of this act. Such assistants can be stationed at convenient points, and these assistants can act for and in the name of the local registrar for that district. Yours truly,

JOHN S. DAWSON, *Attorney-general.*"

In accordance with this opinion, the state registrar recommended to the State Board of Health, at its regular quarterly meeting held at Manhattan on October 20, the adoption of regulation 20, which reads as follows:

"City clerks, as local registrars, are hereby authorized to appoint such assistants, who shall be known as subregistrars, in such localities distant from the registration center as may be necessary to serve the convenience of those having business therewith. All appointments are to be approved by the state registrar and shall serve during his pleasure.

"These subregistrars are to act for and in the name of the local registrar for that district in receiving birth and death certificates and the issue of burial permits only.

"Each subregistrar is required to make report and forward all certificates and papers to the local registrar for whom he is acting, not later than the last day of each month."

This regulation was duly adopted and published. Where this was put into operation the effect was immediately beneficial and complaint ceased almost entirely.

Between the beginning of registration and December 31 there were reported 11,555 births and 6296 deaths. Owing to the fact, however, that there was some confusion of date as to the beginning of registration, these figures are of little statistical value. However, there will be found a list of the causes of death, age, sex, color, social condition, nativity, and occupation for this period, following.

On the suggestion of the Bureau of the Census, on January 1 the cities above ten thousand were segregated from the districts in which they were located, in order that we might determine the death rate in these larger cities as distinguished from the general death rate over the state.

The advice and hearty coöperation of Dr. Cressy L. Wilbur, chief statistician for vital statistics of the Bureau of the Census, have been of great aid in the administration of the law, the bureau furnishing each physician in the state with a vest-pocket copy of the International Classification of the Causes of Death, and on April 2 sending the following letter to every physician, registrar, undertaker and others interested in the law, which undoubtedly was of immense value in securing the hearty coöperation of those addressed:

"DEAR SIR—The complete and correct registration of all births and deaths is most essential to the welfare of the state and to the protection of the legal and personal rights of the people. The information secured from an effective system of registration is indispensable for practical sanitary purposes. In no other way can it be known in just what parts of the state certain diseases are most fatal, and hence where the most

active efforts should be made to restrict them. Without complete registration of births no comparable statistics of infant mortality can be had, and hence the larger number of deaths of infants from preventable causes can not be diminished as rapidly as if a complete knowledge of the extent and causes of infant mortality were available.

"Under the present Kansas law births and deaths are recorded by immediate registration—the only efficient method—upon standard birth and death certificates such as are employed in registration states and approved by the United States Bureau of the Census. As soon as the law is thoroughly enforced throughout the state, so that practically no deaths can occur without a proper legal record, Kansas will become eligible for admission to the registration area, which now includes twenty-two states in which laws having substantially the same requirements as the Kansas act have been successfully enforced. The state will then be represented in the annual mortality statistics published by the Bureau of the Census, and its vital data will be available for use by citizens of the state for many important purposes.

"The success of the law depends upon the thorough enforcement and careful compliance with its provisions by all concerned, and especially by the physicians, widwives, undertakers, sextons, health officers and local registrars. The omission of the record of a single birth or death may be of the gravest importance to the individual or family affected, and hence a conscientious regard should be had to the registration and prompt return to the state registrar at Topeka of all births and deaths that occur. It is a matter not only of state but of national importance that the Kansas law should be effective, because upon the cooperation of the state in this respect the upbuilding of our national system of vital statistics is dependent. Hence I desire to ask your cordial interest and aid in the thorough enforcement of this law. Very respectfully,

CRESSY L. WILBUR, M. D., *Chief Statistician.*"

The necessity of making report at this time for the biennial, covering a period of but six months, makes the report of small statistical value. For instance, the report shows but 96 deaths from typhoid fever for the six months ending June 30, 1912, whereas the part of 1911, covering a part of August and the following months of the year, showed 297 deaths from typhoid fever. This is largely due to the fact that the typhoid season very largely follows the fly season, and the later months of the summer will show an increased death rate from this cause. The few deaths from this cause have been scattered quite generally over the state; in no case has there been the appearance of an epidemic. The deaths from all epidemic diseases have been somewhat small, with the exception of whooping cough, of which there were eighty-five deaths reported, more than of any other one of the communicable diseases, with the exception of tuberculosis. The early part of the year there was a severe epidemic of cerebrospinal meningitis at Kansas City and some other points. Owing to the fact, however, that this report shows such a limited time, it has not been deemed wise to attempt to make any systematic study of the causes of death.

Since the law became operative there have been eight cities newly incorporated, and two have surrendered their incorporation, so at this time there are 491 registrars.

The state registrar respectfully urges the necessity of amending section 4 of the law to provide for the appointment of registrars wherever they may be needed, and provision should be made for at least one registrar in each township if the conditions warrant. In some states it has been found that the justice of the peace of the township makes an acceptable registrar. The appointment of subregistrars should be covered by statute. Respectfully submitted.

W. J. V. DEACON, *State Registrar.*

BIRTHS AND DEATHS IN KANSAS, BY COUNTIES, FOR THE
FIRST SIX MONTHS OF 1912.

	Population.	Deaths.	Births.	Death rate.	Birth rate.
Allen	27,640	117	235	8.4	17.0
Anderson	13,829	62	100	9.0	14.5
Atchison, except Atchison city	11,678	44	82	7.5	14.0
Atchison city	16,429	107	104	13.0	12.7
Barber	9,916	38	107	7.7	21.6
Barton	17,876	91	240	10.2	27.0
Bourbon, except Fort Scott	13,544	64	126	8.0	18.7
Fort Scott	10,463	81	78	15.6	15.0
Brown	21,314	101	232	9.5	21.8
Butler	23,069	91	229	8.0	19.9
Chase	7,527	28	99	7.5	28.4
Chautauqua	11,429	58	128	10.2	22.5
Cherokee	38,162	237	457	12.4	24.0
Cheyenne	4,248	7	27	3.3	12.9
Clark	4,098	21	62	10.3	30.3
Clay	15,251	58	166	7.6	21.8
Cloud	18,388	98	238	10.7	26.0
Coffey	15,205	69	97	9.1	12.8
Comanche	3,281	13	54	8.0	38.0
Cowley	31,790	182	298	11.5	18.8
Crawford, except Pittsburg	36,423	224	437	12.3	24.0
Pittsburg	14,755	142	171	19.3	23.3
Decatur	8,976	19	47	4.3	10.6
Dickinson	24,361	126	277	10.3	22.8
Doniphan	14,422	63	180	8.8	25.0
Douglas, except Lawrence	12,350	55	78	8.9	12.7
Lawrence	12,374	81	88	13.0	14.2
Edwards	7,033	26	84	7.4	24.0
Elk	10,128	54	99	10.7	19.6
Ellis	12,070	54	238	8.9	39.0
Ellsworth	10,444	47	113	9.0	21.7
Finney	6,908	30	64	8.7	18.6
Ford	11,393	61	154	10.7	27.0
Franklin	20,884	134	193	12.8	18.5
Geary	12,681	57	140	9.0	22.0
Gove	6,044	19	57	6.3	19.0
Graham	8,700	31	97	7.1	22.3
Grant	1,087	4	9	7.3	16.3
Gray	3,121	12	28	7.7	18.1
Greeley	1,835	2	10	3.0	15.3
Greenwood	16,060	77	145	9.5	18.0
Hamilton	8,360	5	33	3.0	19.4
Harper	14,748	65	162	8.8	22.0
Harvey	19,200	84	221	8.7	23.0
Haskell	993	2	12	4.0	24.0
Hodgeman	2,930	10	47	7.0	32.4
Jackson	16,851	65	159	7.7	18.9
Jefferson	15,826	92	143	11.6	18.0
Jewell	18,148	84	194	9.3	21.4
Johnson	18,288	101	145	11.0	15.8
Kearny	3,206	11	19	7.0	11.9
Kingman	13,386	57	116	8.5	17.2
Kiowa	6,174	21	91	6.8	29.5
Labette, except Parsons	13,960	91	178	9.6	18.7
Parsons	12,463	95	127	15.2	20.3
Lane	2,608	4	21	3.0	15.4
Leavenworth, except Leavenworth city	21,844	99	85	9.1	7.8
Leavenworth city	19,363	165	146	17.1	15.1
Lincoln	10,142	42	127	8.3	25.1
Linn	14,735	74	188	10.1	25.6
Logan	4,240	19	30	9.0	14.3
Lyon	24,927	138	212	11.1	17.0
Marion	22,415	110	266	9.8	23.8
Marshall	23,880	118	271	9.9	22.7
McPherson	21,521	90	247	8.4	23.0
Meade	5,055	23	59	9.0	23.1
Miami	20,030	152	175	15.2	17.5
Mitchell	14,089	61	188	8.7	26.7
Montgomery, except Independence and Coffeyville	26,316	131	237	9.9	18.0
Independence	10,480	64	97	12.2	18.5
Coffeyville	12,678	85	137	13.4	21.6
Morris	12,897	48	116	7.7	18.7
Morton	1,333	1	12	1.5	18.5

	Population.	Deaths.	Births.	Death rate.	Birth rate.
Nemaha	19,072	70	218	7.3	22.3
Neosho	23,754	130	286	11.0	24.1
Ness	5,883	18	72	6.1	24.4
Norton	11,614	48	94	7.4	16.2
Osage	19,905	94	160	9.4	15.0
Osborne	12,827	49	131	7.7	20.5
Ottawa	11,811	48	144	8.1	24.4
Pawnee	8,859	38	96	8.6	21.6
Phillips	14,150	36	107	5.1	15.1
Pottawatomie	17,522	80	169	9.1	19.3
Pratt	11,156	49	138	8.8	24.9
Rawlins	6,380	15	56	4.7	17.5
Reno, except Hutchinson	21,489	61	248	5.7	23.1
Hutchinson	16,364	123	175	15.1	21.5
Republic	17,447	88	164	10.1	19.0
Rice	15,106	70	136	9.3	24.6
Riley	15,783	103	168	13.0	21.3
Rooks	11,282	50	145	8.8	25.7
Rush	7,826	33	91	8.5	23.3
Russell	10,800	43	113	8.0	20.9
Saline	20,338	94	198	9.3	19.5
Scott	3,047	15	23	10.0	15.3
Sedgwick, except Wichita	20,645	64	181	6.2	17.5
Wichita	52,450	386	463	14.7	17.6
Seward	4,091	13	69	6.3	33.7
Shawnee, except Topeka	18,190	68	126	7.5	13.8
Topeka	43,684	440	442	20.1	20.2
Sheridan	5,651	13	49	4.5	17.5
Sherman	4,549	13	33	5.2	14.7
Smith	15,365	59	168	7.6	21.3
Stafford	12,510	44	141	7.0	22.6
Stanton	1,034	5	4	10.0	8.0
Stevens	2,453	8	26	6.7	20.8
Sumner	30,654	121	312	7.9	20.4
Thomas	5,455	12	43	4.4	15.6
Trego	5,398	13	42	4.8	15.2
Wabauusee	12,721	61	114	9.6	13.0
Wallace	2,759	8	16	6.0	12.0
Washington	20,229	92	204	9.1	20.2
Wichita	2,006	3	21	3.0	21.0
Wilson	19,810	113	259	11.5	26.2
Woodson	9,450	57	70	12.1	14.9
Wyandotte, except Kansas City	17,737	102	134	11.5	15.1
Kansas City	82,331	816	916	19.8	22.2

Total 1,690,949 9,089 17,195

Death rate for state..... 10.75 per 1000

Birth rate for state..... 20.34 per 1000

CLASSIFICATION OF DEATHS.

AUGUST 15 TO DECEMBER 31, 1911. DEATHS, 6295.

AGES OF DECEASED.		SEX.	
Under 1 year.....	1,110	Males	3,537
Between 1 and 2 years.....	254	Females	2,758
Between 3 and 5 years.....	134		
Between 6 and 10 years.....	126		
Between 11 and 15 years.....	120	Total	6,295
Between 16 and 20 years.....	212		
Between 21 and 25 years.....	270		
Between 26 and 30 years.....	276		
Between 31 and 35 years.....	222		
Between 36 and 40 years.....	244		
Between 41 and 45 years.....	239		
Between 46 and 50 years.....	233		
Between 51 and 60 years.....	576		
Between 61 and 70 years.....	815		
Between 71 and 80 years.....	943		
Between 81 and 90 years.....	459		
Between 91 and 100 years.....	38		
Over 100 years.....	4		
Total	6,295		

COLOR.		SOCIAL CONDITION.	
White	5,379	Single	2,479
Indian	19	Married	2,539
Black	397	Widowed	1,131
Total	6,295	Divorced	62
		Unknown	84
		Total	6,295

CLASSIFICATION OF DEATHS—CONTINUED.

NATIONALITY.		OCCUPATIONS OF THE DECEASED.	
Native	5,253	Laborers	262
Foreign	880	Laundry employees	10
Unknown	162	Linemen	4
		Machinists	11
		Masons (brick and stone)	26
		Merchants	127
		Millers	3
		Milliners	2
		Miners	77
		Ministers	34
		Molders	2
		Musicians	8
		Nurses	5
		Officials (public)	13
		Oil- and gas-well workers	1
		Packhouse employees	11
		Painters	22
		Paper hangers	5
		Photographers	4
		Physicians	21
		Planing-mill workers	1
		Plasterers	13
		Plumbers	10
		Policemen	2
		Printers and pressmen	6
		Real-estate agents	17
		Salesmen	18
		Servants	49
		Shoemakers	10
		Soldiers	10
		Steam-railway employees (office)	10
		Steam-railway employees (operating)	59
		Stenographers	7
		Stockmen	15
		Stone and marble cutters	2
		Street-railway employees	4
		Students and children of school age	815
		Tailors	4
		Teachers	29
		Telephone and telegraph operators	4
		Tinners	4
		Undertakers	1
		Veterinaries	8
		Not specified	254
		Total	6,295
Total			
6,295			
OCCUPATIONS OF THE DECEASED.			
Architects and artists	1		
Attorneys	13		
Automobile dealers and garage men	2		
Bakers	7		
Bankers	4		
Barbers	11		
Blacksmiths	22		
Bookbinders	1		
Bookkeepers	8		
Butchers	15		
Cabinetmakers and upholsterers	8		
Carpenters	105		
Carpet weavers	3		
Children under school age	1,495		
Cigarmakers and dealers	1		
Civil engineers and surveyors	3		
Clerks (office)	7		
Clerks (store)	23		
Collectors	2		
Commercial travelers	5		
Contractors	12		
Cooks	15		
Coopers	3		
Dentists	1		
Dressmakers	5		
Drivers and liverymen	43		
Druggists	14		
Editors and writers	8		
Electrical workers	5		
Engineers	14		
Farmers	1,097		
Firemen	9		
Glass workers and blowers	1		
Harness workers	9		
Hotel and restaurant keepers	12		
Housewives	1,786		
Insurance agents	6		
Iron and steel workers	6		
Janitors	11		
Jewelers and watchmakers	2		

NUMBER AND CAUSES. (International classification.)

1.—General Diseases.		1.—General Diseases.	
Typhoid fever	297	Ricketts	4
Malaria	12	Syphilis	8
Smallpox	15	Gonococcus infection	4
Measles	2	Cancer, etc., buccal cavity	9
Scarlet fever	15	Cancer, etc., liver	149
Whooping cough	34	Cancer, etc., intestines, rectum	48
Diphtheria and croup	84	Cancer, etc., female genital organs	37
Influenza	30	Cancer, etc., breast	34
Dysentery	38	Cancer, etc., skin	16
Erysipelas	12	Cancer, etc., other organs	44
Purulent infection and septicæmia	27	Other tumors	8
Tetanus	12	Acute articular rheumatism	34
Mycoses	1	Chronic rheumatism and gout	24
Pellagra	3	Diabetes	89
Tuberculosis of the lungs	359	Exophthalmic goitre	3
Acute miliary tuberculosis	13	Addison's disease	1
Tuberculous meningitis	9	Leuchæmia	11
Abdominal tuberculosis	34	Anæmia, chlorosis	23
Pott's disease	6	Other general diseases	10
White swellings	2	Alcoholism (acute or chronic)	14
Tuberculosis of other organs	10	Other chronic poisonings	5
Disseminated tuberculosis	5		

CLASSIFICATION OF DEATHS—CONTINUED.

2.—Diseases of the Nervous System and of the Organs of Special Sense.

Encephalitis	13
Simple meningitis, etc.	89
Locomotor ataxia	14
Other diseases of the spinal cord	30
Cerebral or hemorrhage apoplexy	311
Softening of the brain	17
Paralysis without specified cause	158
General paralysis of the insane	10
Other forms of mental alienation	20
Epilepsy	25
Convulsions (nonpuerperal)	4
Convulsions of infants	20
Chorea	4
Neuralgia and neuritis	6
Other diseases of the nervous system, Diseases of the ears	14

3.—Diseases of the Circulatory System.

Pericarditis	6
Acute endocarditis	23
Organic diseases of the heart	503
Angina pectoris	31
Diseases of the arteries, atheroma, etc., Embolism and thrombosis	77
24	
Diseases of the lymphatic system	2
Other diseases, circulatory system	5

4.—Diseases of the Respiratory System.

Diseases of the larynx	4
Diseases of the thyroid body	3
Acute bronchitis	21
Chronic bronchitis	26
Bronchopneumonia	71
Pneumonia	240
Pleurisy	6
Pulmonary congestion or apoplexy	29
Gangrene of the lung	2
Asthma	37
Pulmonary emphysema	3
Other respiratory diseases	3

5.—Diseases of the Digestive System.

Diseases of the mouth and annexa	3
Diseases of the pharynx	2
Ulcer of the stomach	19
Other diseases of the stomach	49
Diarrhoea and enteritis (under 2 years)	300
Diarrhoea and enteritis (2 years and over)	81
Ankylostomiasis	1
Intestinal parasites	1
Appendicitis and typhlitis	56
Hernias, intestinal obstructions	72
Other diseases of the intestines	12
Acute yellow atrophy of the liver	5
Cirrhosis of the liver	42
Biliary calculi	15
Other diseases of the liver	30
Diseases of the spleen	2
Simple peritonitis (nonpuerperal)	71
Other diseases of the digestive system,	9

6.—Nonvenereal Diseases of the Genito-urinary System and Annexa.

Acute nephritis	81
Bright's disease	293
Other diseases of the kidneys	9
Calculi of the urinary passages	3
Diseases of the bladder	15
Diseases of the urethra, etc.	1
Diseases of the prostate	34
Uterine hemorrhage (nonpuerperal), Uterine tumor (noncancerous)	5
Other diseases of the uterus	19

8.—Nonvenereal Diseases of the Genito-urinary System and Annexa.

Cysts and other tumors of the ovary, Other diseases of the female genitals,	3
2	

7.—The Puerperal State.

Accidents of pregnancy	5
Puerperal hemorrhage	5
Other accidents of labor	5
Puerperal septicæmia	27
Puerperal albuminuria and convulsions	17
Puerperal phlegmasia, etc.	3
Following childbirth	3
Puerperal diseases of the breast	1

8.—Diseases of the Skin and of the Cellular Tissue.

Gangrene	11
Other diseases of the skin and annexa,	5

9.—Diseases of the Bones and of the Organs of Locomotion.

Diseases of the bones	7
Diseases of the joints	1
Other diseases, organs of locomotion,	1

10.—Malformations.

Congenital malformations	23
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11.—Diseases of Early Infancy.

Congenital debility, icterus, and sclerema	453
Other diseases peculiar to early infancy	74
Lack of care	25

12.—Old Age.

Senility	230
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13.—Affections Produced by External Causes.

Suicide by poison	35
Suicide by asphyxia	3
Suicide by hanging or strangulation, Suicide by drowning	11
1	
Suicide by firearms	30
Suicide by cutting or piercing	3
Other suicides	4
Poisoning by food	10
Other acute poisonings	17
Conflagration	5
Burns (conflagration excepted)	41
Absorption of deleterious gases	10
Accidental drowning	21
Traumatism by firearms	33
Traumatism by cutting or piercing	2
Traumatism by fall	36
Traumatism in mines and quarries	16
Traumatism by machines	7
Traumatism by other crushing	95
Injury by animals	23
Starvation	1
Excessive cold	5
Effects of heat	17
Lightning	5
Electricity (lightning excepted)	6
Homicide by firearms	14
Homicide by cutting or piercing	1
Homicide by other means	12
Fractures (cause not specified)	42
Other external violence	19

14.—Ill-defined Diseases.

Ill-defined organic disease	16
Sudden death	14
Cause of death not specified, or ill-defined	39

Total

6,295

CLASSIFICATION OF DEATHS—CONTINUED.

NUMBER AND CAUSES. (International classification.)

<i>1.—General Diseases.</i>		<i>4.—Diseases of the Respiratory System.</i>	
Typhoid fever	96	Diseases of the nasal fossae	3
Malaria	8	Diseases of the larynx	9
Measles	57	Diseases of the thyroid body	5
Scarlet fever	33	Acute bronchitis	59
Whooping cough	85	Chronic bronchitis	78
Diphtheria and croup	66	Bronchopneumonia	418
Influenza	89	Pneumonia	576
Dysentery	20	Pleurisy	8
Erysipelas	26	Pulmonary congestion or apoplexy ..	57
Purulent infection and septicæmia ..	37	Gangrene of the lung	2
Glanders	1	Asthma	20
Rabies	1	Pulmonary emphysema	17
Tetanus	18	Other respiratory diseases	3
Felagra	1		
Tuberculosis of the lungs	582	<i>5.—Diseases of the Digestive System.</i>	
Acute miliary tuberculosis	18	Diseases of the mouth and annexa ..	3
Tuberculous meningitis	32	Diseases of the pharynx	4
Abdominal tuberculosis	23	Ulcer of the stomach	26
Pott's disease	3	Other diseases of the stomach	76
White swellings	3	Diarrhoea and enteritis under 2	
Tuberculosis of other organs	9	years)	215
Disseminated tuberculosis	7	Diarrhoea and enteritis (2 years	
Ricketts	3	and over)	66
Syphilis	21	Appendicitis and typhlitis	76
Gonococcus infection	2	Hernias, intestinal obstructions	85
Cancer, etc., buccal cavity	10	Other diseases of the intestines	11
Cancer, etc., liver	248	Acute yellow atrophy of the liver ..	4
Cancer, etc., intestines, rectum	69	Hydatid tumor of the liver	1
Cancer, etc., female genital organs ..	61	Cirrhosis of the liver	66
Cancer, etc., breast	29	Biliary calculi	41
Cancer, etc., skin	2	Other diseases of the liver	59
Cancer, etc., other organs	98	Diseases of the spleen	1
Other tumors	4	Simple peritonitis (nonpuerperal) ..	42
Acute articular rheumatism	23	Other diseases of the digestive system,	5
Chronic rheumatism and gout	48		
Scurvy	1	<i>6.—Nonvenereal Diseases of the Geni-</i>	
Diabetes	116	<i>to-urinary System and Anæza.</i>	
Exophthalmic goitre	8	Acute nephritis	54
Addison's disease	2	Bright's disease	471
Leuchæmia	10	Other diseases of the kidneys	9
Anæmia, chlorosis	49	Calculi of the urinary passages	2
Other general diseases	14	Diseases of the bladder	24
Alcoholism (acute or chronic)	22	Diseases of the urethra, etc.	1
Chronic lead poisoning	3	Diseases of the prostate	23
Other chronic occupation poisonings,	2	Uterine tumor (noncancerous)	8
Other chronic poisonings	2	Other diseases of the uterus	7
		Cysts and other tumors of the ovary,	5
<i>2.—Diseases of the Nervous System and</i>		Other diseases of the female genitals,	5
<i>of the Organs of Special Sense.</i>			
Encephalitis	23	<i>7.—The Puerperal State.</i>	
Simple meningitis, etc.	242	Accidents of pregnancy	7
Locomotor ataxia	11	Puerperal hæmorrhage	14
Other diseases of the spinal cord ..	43	Other accidents of labor	9
Cerebral or hæmorrhage apoplexy ..	500	Puerperal septicæmia	65
Softening of the brain	28	Puerperal albuminuria and con-	
Paralysis without specific cause	191	vulsions	28
General paralysis of the insane	15	Puerperal phlogiasia, etc.	7
Other forms of mental alienation	51	Following childbirth	2
Epilepsy	48		
Convulsions (nonpuerperal)	2	<i>8.—Diseases of the Skin and of the</i>	
Convulsions of infants	27	<i>Cellular Tissue.</i>	
Chorea	3	Gangrene	17
Neuralgia and neuritis	11	Furuncle	3
Other diseases of the nervous system,	18	Acute abscess	4
Diseases of the eye and their annexa,	1	Other diseases of the skin and annexa,	5
Diseases of the ears	4		
		<i>9.—Diseases of the Bones and of the</i>	
<i>3.—Diseases of the Circulatory</i>		<i>Organs of Locomotion.</i>	
<i>System.</i>		Diseases of the bones	14
Pericarditis	5	Diseases of the joints	1
Acute endocarditis	32	Other diseases, organs of locomotion,	1
Organic diseases of the heart	798		
Angina pectoris	71	<i>10.—Malformations.</i>	
Diseases of the arteries, atheroma, etc.,	117	Congenital malformations	122
Embolism and thrombosis	29		
Diseases of the lymphatic system	3		
Other diseases, circulatory system	1		

CLASSIFICATION OF DEATHS—CONTINUED.

<i>11.—Diseases of Early Infancy.</i>		<i>13.—Affections Produced by External Causes.</i>	
Congenital debility, icterus, and sclerema	552	Traumatism by cutting or piercing	1
Other diseases peculiar to early infancy	41	Traumatism by fall	55
Lack of care	30	Traumatism in mines and quarries ..	19
<i>12.—Old Age.</i>		Traumatism by machines	12
Senility	483	Traumatism by other crushing	91
<i>13.—Affections Produced by External Causes.</i>		Injury by animals	28
Suicide by poison	36	Starvation	1
Suicide by asphyxia	1	Excessive cold	9
Suicide by hanging or strangulation, ..	17	Effects of heat	1
Suicide by drowning	2	Lightning	5
Suicide by firearms	30	Electricity (lightning excepted)	4
Suicide by cutting or piercing	4	Homicide by firearms	19
Suicide by crushing	2	Homicide by cutting or piercing	6
Other suicides	7	Homicide by other means	11
Poisoning by food	15	Fractures (cause not specified)	15
Other acute poisonings	22	Other external violence	26
Conflagration	5	<i>14.—Ill-defined Diseases.</i>	
Burns (conflagration excepted)	63	Ill-defined organic disease	30
Absorption of deleterious gases	17	Sudden death	25
Accidental drowning	48	Causes of death not specified, or ill-defined	109
Traumatism by firearms	27	Total	9,089

BIRTHS.

Births	17,195	White	16,813
Male	8,824	Black	382
Female	8,371	Stillbirths	532

VITAL STATISTICS.

REPORTED TO KANSAS STATE BOARD OF HEALTH FOR SIX MONTHS
ENDING JUNE 30, 1912.

BIRTHS.

COUNTIES.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Total.
Allen	53	32	39	40	34	37	235
Anderson	20	15	10	25	16	14	100
Atchison, except Atchison city	26	6	18	12	9	11	82
Barber	26	21	14	14	17	15	107
Barton	33	53	47	37	37	33	240
Bourbon, except Fort Scott	17	26	22	19	24	18	126
Brown	36	44	36	46	31	39	232
Butler	54	39	35	30	36	35	229
Chase	16	15	14	17	19	18	99
Chautauqua	29	7	26	32	24	10	128
Cherokee	32	36	77	82	53	77	457
Cheyenne	5	1	13	7	0	1	27
Clark	14	5	2	8	24	9	62
Clay	26	29	14	23	42	27	166
Cloud	54	31	31	33	36	53	238
Coffey	23	19	20	7	15	13	97
Comanche	3	3	3	14	6	10	54
Cowley	59	41	43	35	53	62	298
Crawford, except Pittsburg	92	72	54	65	98	56	437
Decatur	13	9	6	6	10	3	47
Dickinson	55	55	42	42	62	21	277
Doniphan	26	26	24	31	36	33	180
Douglas, except Lawrence	13	15	11	15	13	11	78
Edwards	16	11	20	12	9	16	84
Elk	15	31	16	20	12	5	99
Ellis	33	53	49	32	39	32	238
Ellsworth	29	17	11	25	12	19	113
Finney	15	9	7	11	9	13	64
Ford	22	23	15	46	21	27	154
Franklin	42	37	29	27	25	33	193
Geary	26	27	22	25	25	14	140
Gove	13	5	12	12	7	8	57
Graham	26	8	15	12	22	14	97
Grant	4	1	2	0	2	0	9
Gray	0	5	5	3	9	1	23
Greeley	0	4	1	3	0	2	10
Greenwood	25	31	17	49	14	9	145
Hamilton	3	4	11	8	2	5	33
Harper	13	52	26	29	22	15	162
Harvey	26	36	41	47	34	37	221
Haskell	3	1	2	1	3	2	12
Hodgeman	12	8	8	12	4	3	47
Jackson	23	31	21	33	25	21	159
Jefferson	14	41	21	32	21	14	143
Jewell	44	27	35	23	32	33	194
Johnson	20	33	32	32	15	13	145
Kearny	5	1	4	4	3	2	19
Kingman	12	23	23	14	13	20	115
Kiowa	15	1	27	5	21	22	91
Labette, except Parsons	39	37	29	30	23	15	178
Lane	3	4	4	1	6	3	21
Leavenworth, except Leavenworth city	20	8	13	14	11	14	86
Lincoln	34	13	19	21	13	17	127
Linn	30	30	36	13	43	31	188
Logan	3	11	4	3	8	1	30
Lyon	35	41	26	34	37	39	212
Marion	68	39	45	44	35	35	266
Marshall	54	48	53	27	41	43	271
McPherson	43	49	37	46	36	36	247
Meade	5	10	20	5	7	12	59
Miami	53	20	31	16	25	30	175
Mitchell	42	26	28	35	32	25	188
Montgomery, except Coffeyville and Independence	54	23	46	31	43	35	237
Morris	20	23	12	19	20	22	116

COUNTIES.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Total.
Morton	2	0	3	0	4	3	12
Nemaha	41	38	42	15	37	40	213
Neosho	62	47	39	39	60	39	286
Ness	13	12	15	16	9	7	72
Norton	11	8	16	22	16	21	94
Osage	22	27	27	30	22	22	160
Osborne	18	20	21	29	25	18	131
Ottawa	20	24	27	23	26	19	144
Pawnee	12	18	16	25	14	11	96
Phillips	12	31	26	10	17	11	107
Pottawatomie	23	28	26	42	27	23	169
Pratt	21	31	18	19	27	22	138
Rawlins	12	11	10	7	12	4	56
Reno, except Hutchinson	45	50	40	35	40	33	249
Republic	25	24	31	26	28	30	164
Rice	29	29	34	27	41	26	186
Riley	35	35	30	18	25	25	168
Rooks	44	12	23	20	30	16	145
Rush	19	2	25	23	12	10	91
Russell	23	14	15	16	22	18	113
Saline	29	27	33	30	35	29	198
Scott	6	3	0	3	4	7	23
Sedgwick, except Wichita	43	32	30	26	34	16	181
Seward	12	9	16	8	15	9	69
Shawnee, except Topeka	16	29	26	12	16	27	126
Sheridan	6	5	4	15	8	11	49
Sherman	6	3	8	5	7	4	33
Smith	43	23	18	33	10	36	168
Stafford	29	32	23	12	18	22	141
Stanton	0	0	0	0	0	4	4
Stevens	6	4	2	2	8	4	26
Sumner	63	60	51	37	52	49	312
Thomas	0	13	3	9	4	9	43
Trego	6	11	3	8	6	3	42
Wabaunsee	26	21	14	21	11	21	114
Wallace	5	2	0	3	2	4	16
Washington	37	39	27	46	25	30	204
Wichita	7	1	2	4	3	4	21
Wilson	51	53	43	22	42	43	259
Woodson	11	16	11	10	13	9	70
Wyandotte, except Kansas City	26	23	26	16	23	20	134
CITIES:							
Atchison	20	13	17	11	23	20	104
Coffeyville	40	18	29	13	18	24	137
Fort Scott	13	17	9	13	9	12	73
Hutchinson	42	24	26	21	30	32	175
Independence	22	20	14	14	11	16	97
Kansas City	113	149	220	144	119	166	916
Lawrence	19	9	13	13	16	13	83
Leavenworth	21	20	24	34	20	27	146
Parsons	26	22	22	18	26	13	127
Pittsburg	43	14	41	23	30	15	171
Topeka	72	76	30	61	35	63	442
Wichita	113	61	74	30	69	66	463
Totals	3,235	2,887	2,904	2,725	2,782	2,595	17,123

VITAL STATISTICS.

REPORTED TO KANSAS STATE BOARD OF HEALTH FOR SIX MONTHS
ENDING JUNE 30, 1912.

DEATHS.

COUNTIES.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Total.
Allen	23	24	14	24	15	17	117
Anderson	9	10	10	15	13	5	62
Atchison, except Atchison city	7	10	10	8	6	3	44
Barber	4	7	7	7	7	6	38
Barton	13	18	16	14	19	11	91
Bourbon, except Fort Scott	9	12	17	5	5	6	54
Brown	21	20	21	14	13	12	101
Butler	22	16	15	10	20	8	91
Chase	8	5	3	7	2	3	28
Chautauqua	9	8	10	13	8	10	58
Cherokee	40	50	40	48	31	28	237
Cheyenne	2	1	2	2	0	0	7
Clark	9	2	4	3	1	2	21
Clay	7	7	16	14	7	7	58
Cloud	25	16	12	17	13	15	98
Coffey	17	8	10	16	14	4	69
Comanche	3	2	2	1	3	2	13
Cowley	36	25	26	40	22	33	182
Crawford, except Pittsburg	54	48	42	35	27	18	224
Decatur	7	2	3	3	3	1	19
Dickinson	27	24	23	24	17	10	125
Doniphan	12	4	13	14	11	9	63
Douglas, except Lawrence	9	8	9	15	10	4	55
Edwards	6	3	10	3	3	1	26
Elk	11	12	12	8	8	3	54
Ellis	8	9	13	8	8	8	54
Ellsworth	8	7	11	7	7	7	47
Finney	4	7	2	5	4	8	30
Ford	9	13	9	11	10	9	61
Franklin	23	22	21	24	20	24	134
Geary	12	14	9	8	4	10	57
Gove	1	2	10	2	1	3	19
Graham	4	6	2	6	5	8	31
Grant	1	1	1	1	0	0	4
Gray	1	8	2	2	1	3	12
Greeley	0	0	0	0	0	2	2
Greenwood	11	18	21	10	10	7	77
Hamilton	2	1	2	0	0	0	5
Harper	13	15	9	12	10	6	65
Harvey	15	15	20	16	8	10	84
Haskell	0	0	1	0	1	0	2
Hodgeman	4	3	0	1	1	1	10
Jackson	13	10	12	13	12	5	65
Jefferson	20	17	18	16	9	12	92
Jewell	12	14	22	19	7	10	84
Johnson	15	22	19	20	14	11	101
Kearny	2	1	4	3	1	0	11
Kingman	13	6	17	6	11	4	57
Kiowa	5	5	3	2	5	1	21
Labette, except Parsons	24	12	16	17	13	9	91
Lane	0	2	1	0	0	1	4
Leavenworth, except Leavenworth city	19	13	28	14	14	11	99
Lincoln	11	10	5	1	7	8	42
Linn	19	18	15	8	8	6	74
Logan	1	0	6	5	2	5	19
Lyon	29	20	27	27	22	13	138
Marion	18	14	20	22	16	20	110
Marshall	23	17	18	19	19	22	118
McPherson	14	17	13	16	18	12	90
Meade	5	5	5	3	2	3	23
Miami	31	26	29	27	17	22	152
Mitchell	6	17	8	12	11	7	61
Montgomery, except Coffeyville and Independence	22	24	27	24	16	18	131
Morris	9	13	11	8	1	6	48

COUNTIES.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Total.
Morton	0	1	0	0	0	0	1
Nemaha	16	10	14	12	11	7	70
Neosho	20	25	19	28	19	24	130
Ness	4	4	4	3	2	1	18
Norton	7	5	9	8	8	6	43
Osage	25	10	23	18	11	7	94
Osborne	4	8	9	14	6	8	49
Ottawa	9	7	11	7	9	5	48
Pawnee	4	4	8	10	6	6	38
Phillips	4	4	8	9	5	6	36
Pottawatomie	13	13	15	14	11	14	80
Pratt	14	10	7	7	7	4	49
Rawlins	2	0	0	4	6	3	15
Reno, except Hutchinson	15	11	10	7	9	9	61
Republic	20	12	14	12	16	14	88
Rice	12	8	11	14	21	4	70
Riley	17	20	21	15	20	10	103
Rooks	5	16	6	9	9	5	50
Rush	7	1	9	7	6	3	33
Russell	7	7	7	8	7	7	43
Saline	14	12	15	19	22	12	94
Scott	4	2	0	4	1	4	15
Sedgwick, except Wichita	19	15	12	6	7	5	64
Seward	3	3	3	2	0	2	13
Shawnee, except Topeka	9	11	21	11	7	9	68
Sheridan	3	0	1	3	4	2	13
Sherman	2	1	2	3	4	1	13
Smith	10	8	15	10	11	5	59
Stafford	7	8	14	6	5	4	44
Stanton	0	1	2	1	1	0	5
Stevens	1	3	0	3	1	0	8
Sumner	21	22	28	16	19	15	121
Thomas	5	0	0	2	3	2	12
Trego	3	2	3	1	4	0	13
Wabaunsee	11	10	9	12	12	7	61
Wallace	1	3	1	0	2	1	8
Washington	23	16	16	7	15	15	92
Wichita	1	0	0	0	1	1	3
Wilson	22	22	22	20	16	11	113
Woodson	12	11	13	6	7	8	57
Wyandotte, except Kansas City	12	21	26	25	14	4	102
CITIES:							
Atchison	15	19	19	27	18	14	107
Coffeyville	17	16	15	11	11	15	85
Fort Scott	20	12	14	9	15	11	81
Hutchinson	24	21	24	17	21	16	123
Independence	15	11	9	12	9	8	64
Kansas City	145	121	188	157	118	87	816
Lawrence	18	21	12	8	13	9	81
Leavenworth	35	29	25	25	32	19	165
Parsons	24	15	10	23	10	13	95
Pittsburg	26	22	24	31	22	17	142
Topeka	96	76	76	67	75	50	440
Wichita	81	81	61	50	51	62	386
Totals	1,721	1,552	1,689	1,550	1,328	1,101	8,942

CITIES.

Atchison	12	2	27	3	1	7	12	7	11	2
Carryville	21	8	9	15	2	12	12	7	11	2
Fort Scott	10	16	1	8	8	11	1	1	84	6
Hutchinson	91	4	15	5	9	2	5	1	42	1
Kansas City	129	110	5	87	179	71	4	4	42	1
Leavenworth	42	18	9	16	2	2	2	2	2	2
Parsons	4	2	9	6	290	1	1	1	2	2
Pittsburg	5	37	63	102	9	2	1	1	2	2
Topeka	23	12	52	6	128	94	3	2	3	1
Wichita	35	6	32	26	262	3	3	2	3	1
Totals	1,022	149	672,799	772,115	226,890	763	187	72	916	89
			781	2,115	6,890	37	187	100	30	89

* No health officer.



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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DEACON, Statistician.

No. 1.

JANUARY, 1911.

Vol. VII.

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Law is made for man, not man for the law.

The contributing man is the ideal man of to-day.

Every strong man has his proportionate weakness.

The man who works is a respecter of work and is respected.

“The ideal stoops to meet the steadfast coming of unfaltering feet.”

Typhoid fever caused fewer deaths in the United States in 1909 than any year since 1900.

The average cost per day per patient in the tuberculosis sanatoria of the United States is \$1.67.

The desire for possession is becoming less and the desire for accomplishment is becoming greater every day.

The death rate from tuberculosis in the United States in 1909 was 167.5 per 100,000, a decrease of 6.4 from 1908.

The leading cause of death in the United States in 1909 was tuberculosis, representing 11.15 per cent of the total mortality.

VITAL STATISTICS

Reported to the Kansas Board of Health for December, 1910.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tubercu- loris.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
The State.. total, December, 1909	243	53	107	28	141	15	889	6	177	1	157	3
	277	58	125	35	217	26	318	6	239	1	96	3
Allen	3	3	1	1	3	0	1	0	5	0	0	0
Anderson	1	1	0	0	0	0	0	0	0	0	0	0
Atchison	0	0	0	0	0	0	0	0	4	0	0	0
Barber	0	0	0	0	2	2	2	0	0	0	0	0
Barton	1	1	0	0	1	0	19	0	0	0	0	0
Bourbon	1	1	0	0	1	1	0	0	0	0	0	0
Brown	0	0	0	0	0	0	1	0	36	0	0	0
Butler	1	1	0	0	1	1	1	1	1	0	1	0
Chase	0	0	0	0	0	0	2	0	0	0	1	0
Chautauqua	1	1	1	0	3	0	7	0	1	0	0	0
Cherokee	0	0	0	0	0	0	0	0	0	0	0	0
Cheyenne	0	0	0	0	0	0	1	0	0	0	0	0
Clark	0	0	0	0	0	0	0	0	1	0	0	0
Clay	0	0	0	0	0	0	1	0	0	0	0	0
Cloud	0	0	2	0	1	0	0	0	0	0	0	0
Coffey	0	0	1	0	0	0	0	0	0	0	0	0
Comanche	0	0	1	0	3	1	1	1	0	0	0	0
Cowley	2	2	3	3	5	2	3	0	0	0	0	0
Crawford	0	0	0	0	1	0	0	0	1	0	0	0
Decatur	0	0	2	0	0	0	1	0	5	0	0	0
Dickinson	1	1	1	1	0	0	7	0	1	0	0	0
Doniphan	1	1	1	0	5	0	6	0	0	0	3	0
Douglas	0	0	1	0	1	0	4	0	0	0	10	0
Edwards	0	0	0	0	1	0	0	0	0	0	0	0
Ellis	0	0	0	0	7	0	0	0	0	0	0	0
Ellsworth	0	0	0	0	0	0	10	0	0	0	0	0
Finney	0	0	0	0	0	0	0	0	0	0	10	0
Ford	1	1	2	2	0	0	6	0	0	0	4	0
Franklin	4	4	0	0	4	0	2	0	0	0	0	0
Geary	0	0	0	0	1	0	0	0	0	0	0	0
Gove	0	0	0	0	0	0	5	0	0	0	0	0
Graham	0	0	0	0	0	0	2	0	0	0	6	0
Grant	0	0	0	0	0	0	0	0	0	0	0	0
Gray	0	0	0	0	0	0	4	0	0	0	0	0
Greeley	1	1	0	0	0	0	15	0	0	0	1	0
Greenwood	0	0	0	0	0	0	2	0	0	0	0	0
Hamilton	0	0	2	0	3	0	2	0	0	0	0	0
Harper	0	0	0	0	0	0	8	0	0	0	0	0
Harvey	1	0	0	0	0	0	0	0	0	0	0	0
Haskell	0	0	0	0	0	0	14	0	0	0	0	0
Hodgeman	0	0	1	0	0	0	0	0	0	0	0	0
Jackson	0	0	0	0	0	0	4	0	1	0	1	0
Jefferson	0	0	1	0	0	0	3	0	0	0	0	0
Jewell	0	0	2	1	0	0	0	0	4	0	0	0
Johnson	0	0	0	0	0	0	0	0	0	0	0	0
Kearny	1	1	0	0	5	1	1	1	1	0	0	0
Kingman	0	0	0	0	0	0	10	0	0	0	0	0
Kiowa	2	2	0	0	0	0	2	0	0	0	0	0
Labette	0	0	0	0	0	0	0	0	0	0	0	0
Lane	0	0	0	0	0	0	0	0	0	0	0	0
Leavenworth	0	0	0	0	0	0	5	0	0	0	0	0
Lincoln	1	1	0	0	0	0	2	1	0	0	0	0
Lincoln	0	0	1	0	0	0	1	0	0	0	0	0
Linn	1	0	0	0	0	0	0	0	0	0	5	2
Logan	0	0	0	0	0	0	0	0	0	0	0	0
Lyon	6	2	6	2	7	0	1	0	0	0	27	0
Marion	0	0	0	0	0	0	1	0	0	0	0	0
Marshall	2	2	5	0	0	0	3	0	78	0	0	0
McPherson	0	0	0	0	1	0	2	0	0	0	0	0

CONTAGIOUS AND INFECTIOUS DISEASES - Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
Mende.....	0	0	2	1	0	0	7	0	0	0	0	0
Miami.....	0	0	1	0	0	0	0	0	0	0	1	0
Mitchell.....	0	0	1	0	0	0	0	0	0	0	0	0
Montgomery.....	1	1	0	0	0	0	2	0	4	0	1	0
* Morris.....												
Morton.....	0	0	0	0	0	0	0	0	0	0	0	0
Nemaha.....	0	0	1	1	0	0	3	0	1	0	0	0
Neosho.....	3	3	1	0	0	0	1	0	0	0	0	0
Ness.....	0	0	3	0	0	0	0	0	0	0	3	0
Norton.....	0	0	6	0	3	0	0	0	0	0	0	0
Osage.....	8	0	3	2	0	0	6	0	1	0	2	0
Osborne.....	0	0	2	0	1	0	0	0	0	0	0	0
* Ottawa.....												
* Pawnee.....												
Phillips.....	0	0	0	0	0	0	0	0	0	0	0	0
* Pottawatomie.....												
Pratt.....	0	0	6	0	24	0	30	0	0	0	0	0
Rawlins.....	0	0	0	0	0	0	3	0	0	0	5	0
Reno.....	2	3	2	1	0	0	40	0	1	0	0	0
Republic.....	1	0	0	0	3	0	8	0	0	0	1	0
Rice.....	0	0	0	0	0	0	0	0	0	0	0	0
Riley.....	0	0	0	0	0	0	8	0	0	0	1	0
Rooks.....	0	0	1	1	0	0	0	0	1	1	0	0
Rush.....	0	0	0	0	0	0	0	0	0	0	0	0
Russell.....	1	0	1	0	1	0	3	0	0	0	0	0
Saline.....	0	0	0	0	0	0	8	0	0	0	0	0
Scott.....	0	0	1	0	0	0	0	0	0	0	0	0
Sedgwick.....	0	0	1	0	3	0	8	0	0	0	0	0
Seward.....	0	0	2	0	0	0	0	0	0	0	0	0
Shawnee.....	1	0	0	0	0	0	3	0	2	0	0	0
Sheridan.....	0	0	1	0	0	0	1	0	0	0	0	0
Sherman.....	1	1	0	0	0	0	0	0	0	0	0	0
Smith.....	0	0	0	0	0	0	7	0	0	0	0	0
Stafford.....	2	2	1	1	0	0	17	0	0	0	18	0
* Stanton.....												
Stevens.....	0	0	0	0	0	0	0	0	0	0	0	0
Sumner.....	1	1	0	0	1	1	18	0	6	0	1	0
* Thomas.....												
Trego.....	0	0	0	0	0	0	1	1	0	0	0	0
Wabunsee.....	1	0	0	0	0	0	0	0	0	0	0	0
Wallace.....	0	0	0	0	0	0	0	0	0	0	0	0
Washington.....	0	0	0	0	0	0	1	0	0	0	5	1
* Wichita.....												
Wilson.....	0	0	0	0	0	0	2	1	0	0	0	0
Woodson.....	0	0	0	0	0	0	1	0	0	0	0	0
Wyandotte.....	0	0	0	0	0	0	2	0	9	0	1	0
Cities:												
Fort Scott.....	2	1	3	0	1	0	0	0	0	0	2	0
Atchison.....	0	0	0	0	1	0	1	0	0	0	0	0
Coffeyville.....	1	0	3	0	2	2	3	0	0	0	0	0
Kansas City.....	2	6	22	4	18	0	26	0	11	0	5	0
Leavenworth.....	1	1	3	2	1	0	3	0	2	0	31	0
Parsons.....	2	2	1	0	2	1	3	0	0	0	3	0
* Pittsburg.....												
Topeka.....	3	3	1	1	6	0	13	0	0	0	2	0
Wichita.....	5	2	4	3	18	3	4	0	0	0	6	0
State Institutions.....	167	2	1	1	0	0	0	0	0	0	0	0

* No reports.

Politics, and the lack of public interest in or appreciation of the importance of local health officers have been and still are our greatest handicap to effective public health work. — *Probst.*

DRUG ANALYSES No. XXXIV.

By L. E. SAYRE, Director; L. D. HAVENHILL, Chief; G. N. WATSON, Analyst;
C. M. STERLING, Microscopist.

We have to report since our last month's report, the analyses made in the drug laboratory as tabulated below.

Attention might be called to the low grade of hydrastis here reported. This is one of the more expensive drugs, and the pharmacists should be careful in the purchase of this that its alkaloidal strength is guaranteed. It should yield, when assayed by the process of the Pharmacopœia, not less than 2.5 per cent hydrastine.

The samples of ammonia water which have been sent are low in alkalinity. Aqua ammonia dispensed for medicinal use should contain not less than 10 per cent by weight of ammonia gas, and it should be free from empyreumatic products. In some of the samples examined there were pyridinlike substances. This renders such ammonia water unfit for making such preparations as the aromatic spirits of ammonia or any other preparations containing ammonia water intended for internal use. Ammonia water should stand the following test: If it be slightly supersaturated with nitric acid and the liquid evaporated in a porcelain dish on a water bath to dryness, it should not afford a colored residue. This residue, on ignition, should be completely volatilized. This is a very simple test, and no preparation containing ammonia, intended for internal use, should be made of an ammonia water which does not stand this test, as well as the other tests of the Pharmacopœia.

It may be of interest to the pharmacists, in connection with drugs handled by them, to refer to the Federal "Insecticide Regulations." No. 16 of the new Insecticide Regulations (as published) is as follows:

REGULATION 16. *Ingredients Required to be Declared.*

(a) Insecticides (other than Paris greens and lead arsenates) and fungicides containing arsenic in any of its combinations or in the elemental form must bear a statement on the label showing the total amount of arsenic present (expressed as per centum of metallic arsenic) and also the amount present in water-soluble form (expressed as per centum of metallic arsenic).

(b) Insecticides (other than Paris greens and lead arsenates) and fungicides containing inert substances which do not prevent, destroy, repel or mitigate insects or fungi, must bear a statement on the label of the name and percentage of each inert substance therein, unless the name and percentage of each active ingredient of the article is plainly and correctly stated, in which case it will be sufficient to state upon the label that the article contains inert substances, giving the correct percentage thereof.

Perhaps the most popular insect powder handled by the druggists, of vegetable origin, is that obtained from the pyrethrum flowers. Two species of the pyrethrum are used in the manufacture of this insect powder. They resemble each other in their microscopical or histological elements. Under the microscope pollen grains are seen—numerous hairs (trichomes), which are T-shaped. There are also some crystals of calcium oxalate. This powder may be adulterated with powdered leaves and stems, and there is also found in some adulterated powders the flowers of chamomile and other related species. Sawdust, mustard hulls, corn meal, flour, etc., are easily detected under the microscope.

Inasmuch as the above federal regulation applies to insecticides, and as the druggists are the principal avenues for the distribution of this latter class, it would seem to be timely, at least, that the pharmacist be informed in regard to this federal regulation. It behooves the druggists in purchasing articles of this class that great care be exercised, and that the article, as to its purity, should be guaranteed.

REPORT OF ANALYSES.

Lab. No. 4424, Insp. No. 5004. "Tr. Cadomene." Manufactured by the Prescription Products Company, Dayton, Ohio. Declared to contain 46 per cent alcohol. Found to contain 43.6 per cent alcohol. Damiana, phosphorus, cinchonidine and strychnine were detected.

Lab. No. 4634, Insp. No. 8730. "Make-Man Tablets." The Make-Man Tablet Company, Chicago, Ill. Declared to be a brain, blood and nerve food. Tablets have been reported upon by the government analyst. They were reported to "consist essentially of aloes, arsenic, strychnine, potassium sulphate, iron carbonate, iron oxide, and a considerable inert siliceous material." The tablets were declared misbranded and two judgments rendered.

Lab. No. 4647, Insp. No. 2787. "Fomaline." Used in ice cream by United States Milk Company, Paola. Sample was found to contain 80 per cent tragacanth and about 20 per cent powdered sugar.

Lab. No. 4658, Insp. No. 2798. "Oil of Peppermint." A. B. Carter, Valley Falls. Specific gravity, 0.903. Menthyl acetate, 9.48 per cent; menthol, 62.2 per cent. Sample contained a slight sediment. Passed.

Lab. No. 4716, Insp. No. 8750. "Tr. of Ginger." Owl Pharmacy, Coffeyville. Sample was found to contain 90 per cent of alcohol. Passed.

Lab. No. 4720, Insp. No. 8754. "Essence of Jamaica Ginger." Hebrank Drug Company, Independence. Sample was found to contain 88 per cent of alcohol. Passed.

Lab. No. 4734, Insp. No. 8766½. "Tr. of Ginger." From Pleasanton. Found to contain 90 per cent of alcohol. Passed.

Lab. No. 4748, Insp. No. 2843. "Thompson's Raspberry Compound." Manufactured by Chas. P. Thompson, La Crosse, Wis. Two-ounce sample, dark-red liquid, giving acid reaction. Was found to contain 0.565 gm. of citric acid to each cubic centimeter, and less than one-quarter per cent of alcohol. Sample was colored with aniline dye. The directions are to dissolve the contents (about two ounces) of the bottle in three gallons of water; three pounds of sugar are added, and the product used as a beverage. Fruit flavor; easily volatilized, not characteristic of genuine raspberry flavor.

Lab. No. 4750, Insp. No. 2859. "Syrup of Iodide of Iron." L. A. Lhuillier, Pleasanton. Sample was dark brown, due to a caramelization of sugar. Was found to contain 4.07 per cent of ferrous iodide. Syrup of ferrous iodide should have a pale green color and contain 5.06 of ferrous iodide. Deteriorated.

Lab. No. 4751. Insp. No. 2860. "Oil of Sassafras." L. A. Lhuillier, Pleasanton. Polarization, 2° 4'. Sample mixes with alcohol in all proportions. Special gravity at 25° C., 1.068. Passed.

Lab. No. 4752, Insp. No. 8794. "Tr. of Capsicum." L. M. & M. B. Foster, Munden. Sample was found to contain 86.65 per cent alcohol. Passed.

Lab. No. 4753, Insp. No. 8795. "Powdered Hydrastis." W. C. Arnold, Mashaska. Found to contain 2.44 per cent of hydrastine. Passed.

Lab. No. 4754, Insp. No. 8796. "Tr. of Belladonna." Lower's Drug Store, Narka. Found to contain 0.0248 gm. of mydriatic alkaloids in 100 cc. of the tincture. Passed.

Lab. No. 4755, Insp. No. 8797. "Ammonia Water." Republic Pharmacy, Belleville. Found to contain 5.47 per cent of ammonia. Contains sulphates and chlorides. Exceeds limit of readily oxidizable substances. Contains coal tar bases of pyridin group. Ammonia water should contain 10 per cent of ammonia. Adulterated.

Lab. No. 4756, Insp. No. 8798. "Tr. of Aconite." Arbuthnot & Billingsley, Belleville. The official assay shows the presence of 0.034 gm. of aconite in 100 cc. of the tincture. Tincture of aconite should contain 0.045 gm. of aconitine in 100 cc. of the tincture. Contained a slight sediment. Below standard.

Lab. No. 4757, Insp. No. 8799. "Ammonia Water." John M. Hutchinson, Jewell City. Found to contain 8.86 per cent of ammonia. Sample exceeds limit of readily oxidizable impurities and contains coal tar bases. Sample contained a slight brownish sediment and had a slight yellowish color. Below standard.

Lab. No. 4758, Insp. No. 8800. "Tr. of Belladonna." George B. Crandall, Jewell City. Found to contain 0.018 gms. of mydriatic alkaloids in 100 cc. of the tincture. Tincture of belladonna should contain 0.03 gms. of mydriatic alkaloids in 100 cc. of the tincture. Below standard.

Lab. No. 4759, Insp. No. 8801. "Tr. of Belladonna." Retailer, E. E. Lynn, Mankato. Found to contain 0.027 per cent of mydriatic alkaloids. Passed.

Lab. No. 4761, Insp. No. 8803. "Elixir of Potassium Bromide." J. E. Hawley, Burr Oak. Found to contain 17.5 gms. of potassium bromide in 100 cc. of the elixir. Passed.

Lab. No. 4763, Insp. No. 8805. "Powdered Hydrastis." A. P. Harper, Scandia. Found to contain 1.29 per cent of hydrastine. Powdered hydrastis should contain 2.5 per cent of hydrastine. Below standard.

Lab. No. 4764, Insp. No. 8806. "Elixir of Potassium Bromide." Layton & Neilson, Concordia. Found to contain 17.6 gms. in 100 cc. Passed.

Lab. No. 4765, Insp. No. 8807. "Ammonium Chloride." Retailer, W. F. Neitzel, Concordia. Sample was found to contain 99.1 per cent of ammonium chloride. Ignition of 1 gm. of the sample leaves a residue of 0.0045 gm. The residue from 1 gm. should not exceed 0.0005 gms. Calcium and sulphates were detected.

Lab. No. 4766, Insp. No. 8808. "Ammonium Chloride." Clyde Drug Company, Clyde. Sample was found to contain 99.8 per cent of ammonium chloride. Weight of residue from 1 gm., 0.0016. Residue should not exceed 0.0005 and should contain not less than 99.5 per cent ammonium chloride.

Lab. No. 4768, Insp. No. 8810. "Powdered Hydrastis." W. R. Boal, Clifton. Sample was found to contain 2.57 per cent hydrastine. Passed.

Lab. No. 4770, Insp. No. 5030. "Perhydrol." Manufactured by Merck. A concentrated solution of hydrogen peroxide, declared by the manufacturer to contain 30 per cent of hydrogen peroxide. To make a three per cent solution the directions are to dilute one part with nine parts of water. A dilution was made in this labora-

tory, using one part by weight of perhydrol to nine parts by weight of water, and the resulting solution was found to contain 3.01 per cent of hydrogen peroxide.

Lab. No. 4770 $\frac{1}{2}$, Insp. No. ——. "Cider." Declared to have produced symptoms of poisoning. Sample was examined for poisonous substances and found to contain about 12 grains of zinc acetate in 8 ounces of the sample, a quantity sufficient to produce the symptoms of nausea and vomiting as reported.

Lab. No. 4779, Insp. 8812. "Tr. of Ginger." S. R. Seaver, Arkington. Found to contain 89.5 per cent of alcohol. Passed.

Lab. No. 4793, Insp. No. 8813. "Ammonia Water." O'Brien Pharmacy, Beloit. Specific gravity, 1.065. Contained 8.02 per cent of ammonia. Very small amount of chlorides were present. Below standard.

Lab. No. 4795, Insp. 8815. "Tr. of Sanguinaria." W. E. Keef, Glen Elder. Contained 57.5 alcohol and 2.175 gms. of extractive in 100 cc. of the tincture. Passed.

Lab. No. 4796, Insp. No. 8816. "Tr. of Belladonna." J. G. Trueblood, Glen Elder. Contained 0.024 gm. of mydriatic alkaloïds in 100 cc. of the tincture. Below standard.

Lab. No. 4799, Insp. No. 8819. "Powdered Hydrastis". C. M. Utt & Co., Downs. Found to contain 1.46 per cent of hydrastine. Powdered hydrastis should contain 2.5 per cent of hydrastine. Below standard.

Lab. No. 4807, Insp. No. 8827. "Tr. of Belladonna." Angell Drug Company, Portis. Contained 0.024 gm. of mydriatic alkaloïds in 100 cc. of the tincture. Below standard.

Lab. No. 4820, Insp. No. 8840. "Tr. of Belladonna Leaves." Ellis Drug Store, Ellis. Contained 0.029 gm. of mydriatic alkaloïds in 100 cc. of the tincture. Passed.

Lab. No. 4821, Insp. No. 8841. "Tr. of Hyoscyamus." Red Cross Pharmacy, Hays. Contained 0.009 gm. of mydriatic alkaloïds in 100 cc. of the tincture. Passed.

"I know of a harmless enough patent medicine consisting of 99 parts advertising and 1 part ordinary spring water, which is exploited to cure not only tuberculosis but also cancer, falling of the hair, insanity, epilepsy, drunkenness, disorderly conduct and pimples.—Porter.

Changes in the Weight of Stored Flour and Butter.

By J. T. WILLARD, Food Analyst, Kansas State Board of Health. Read before the Association of State and National Food and Dairy Departments, New Orleans, December 8, 1910.

The change of weight to which commodities sold by weight are subject is a very important factor in the commercial world. The honest farmer who salts the cattle well that they may be encouraged to drink freely of water just before they go on the buyer's scales, and the milkman whose most effective ally is the pump, are but crude workers in a field of practice in which certain other producers are more skillful even if no more honest. It is obvious, too, that a dealer might suffer considerable loss by the natural drying of a commodity kept in bulk and sold by weight. On the other hand, it is not impossible that if he holds it under more humid conditions he may profit from an unearned increment due to absorption of moisture. The bread and butter of the people are so important as means of sustenance that they are taken colloquially as typifying or representing all food. The skill of the butter-maker is the more appreciated by his employers the nearer he can bring his product to 16 per cent of water without actually touching the fatal figure. A baker values flour in proportion to its ability to absorb water and at the same time produce a desirable loaf. Obviously the amount of water that can be absorbed by a flour in its conversion into bread depends to a certain extent upon the moisture already present in the flour. Further, the amount of moisture in the flour as compared with that in the wheat used in its manufacture is a very important consideration for the miller. All wheat is tempered by adding moisture in the form of steam or water, that the bran may be toughened to prepare the grain for grinding, and it has been suspected that the miller may not be averse to having the flour itself contain a greater amount of moisture than did the wheat, though the heat of grinding is assumed to drive off this added water from the flour. Be that as it may, weighings made of flour as placed upon the market have frequently shown that the packages are short in weight. The manufacturer contends that there is some mechanical loss in handling the sacks and that the flour will naturally dry out under certain conditions, especially when stored near a source of heat.

There is doubtless a considerable basis of fact in this claim. The powdered condition of the flour would probably facilitate drying to a certain extent, though the compact condition of such flour sacks is against any free drying.

Similarly, the manufacturers of butter are ready with the explanation of short weight by attributing it to the drying of their product. If the moisture present is sufficiently below 16 per cent manufacturers may safely make this claim, even though it would be unavailable if the moisture content of the butter approached the legal limit.

For the purpose of obtaining data bearing upon these questions, especially with reference to prosecutions, at the request of Secretary Crumbine experiments were undertaken at the Kansas State Agricultural College to determine the change of weight to which flour and butter may be subject when stored.

Changes in the Weight of Stored Flour, Pounds.

Sack.	Aug. 11.	Sept. 11.	Oct. 11.	Nov. 17.	Jan. 11.	Mar. 11.	April 11.	May 18.	June 14.	Aug. 10.
1.....	48¼	48¼	48	48	47¾	47¾	47½	47½	47¾	47¾
2.....	48¼	48	47¾	47¾	47½	47¾	47¼	47¼	47¾	47½
3.....	48¼	48	47¾	47¾	47½	47½	47¾	47¼	47¾	47¾
4.....	48	48	47¾	47¾	47¾	47¾	47¾	47¾	47½	47½
5.....	48	48¾	48¾	47¾	47¾	47¾	47¾	47¾	47¾	47¾
6.....	48	47¾	47¾	47¾	47¾	47¾	47¾	47¾	47½	47¾
7.....	48¼	48¼	48	47¾	48	47¾	47¾	47¾	47¾	47¾
8.....	48¼	48	48	47¾	48	47¾	47½	47½	47¾	47¾
9.....	48¼	48¼	47¾	47¾	47¾	47¾	48¾	47¾	47¾	47¾
10.....	48¼	48¾	48	47¾	47¾	47¾	47½	47½	47½	47¾
11.....	48¼	48	47¾	47¾	47½	47¾	47¼	47¼	47¼	47¾
12.....	48¼	48	47¾	47¾	47½	47¾	47¼	47¼	47¾	47½
13.....	48¼	48¾	48	47¾	47¾	47¾	47½	47½	47¾	47¾
14.....	48¼	48	47¾	47¾	47¾	47¾	47¼	47½	47¾	47¾
15.....	48¼	48	47¾	47¾	47¾	47¾	47¾	47¾	47½	47¾
16.....	48¼	48¼	48	47¾	47¾	47¾	47½	47¾	47¾	47¾
17.....	48¼	48¾	48	47¾	47¾	47¾	47¾	47¾	47¾	47¾
18.....	48¼	48¾	48	47¾	47¾	47¾	47¾	47¾	47¾	47¾
19.....	48¼	48¾	47¾	47¾	47½	47½	47¾	47¾	47¾	47¾
20.....	48	47¾	47¾	47½	47¼	47¼	47¼	47¼	47¼	47½
21.....	48¼	47¾	47¾	47¾	47¾	47¼	47¼	47¼	47¾	47¾
22.....	48¼	48	47¾	47¾	47¾	47¾	47½	47½	47¾	47¾
23.....	48¼	48	47¾	47¾	47¾	47¾	47¾	47¾	47¾	47¾
24.....	48¼	48	47¾	47¾	47¾	47¾	47¾	47¾	47¾	47¾
25.....	48¼	48	47¾	47¾	47¾	47¾	47¾	47½	47¾	47¾
26.....	48¼	48	47¾	47¾	47¾	47¾	47¾	47½	47¾	47¾
27.....	48¼	48	47¾	47¾	47½	47½	47¼	47¼	48¾	.....
Average.....	43.19	48.05	47.90	47.78	47.65	47.55	47.40	47.43	47.55	47.67

The flour used in this experiment was furnished by the Manhattan Milling Company. Twenty-seven sacks piled as closely together as possible, in three layers of nine sacks each, were stored in an airy room which during the winter was heated to ordinary room temperature. The sacks were kept in the same positions in the pile throughout the test, but no difference due to position was detected. The sacks were stored on a double floor and were protected by hardware cloth of one fourth inch mesh from the inroads of mice. At first the sacks were weighed monthly, but later at less frequent intervals. The last weighing was made one year after the first. The accompanying table shows in detail the weights of the sacks at each period of weighing. The averages at the different dates were as follows, the weight including the sack: August 11,

1909, 48.19 pounds; September 11, 48.05. October 11, 47.90; November 17, 47.73; January 11, 47.65; March 11, 47.55; April 11, 47.40; May 13, 47.43; June 14, 47.55; and August 10, 1910, 47.67.

It will be seen that there was very little loss the first two months. The later loss may have been due to the heating of the room beginning in the latter part of October. Through the spring and summer months there was a slight gain; so that the average loss of the twenty-seven sacks at the end of the year was 0.52 pound. The lowest weights were observed April 11, when the loss on the average amounted to 0.79 pound per sack. It will be seen that it would be quite possible for flour to leave the mill with sacks containing the full amount required and yet be short in weight at a later date, due to loss of moisture. The problem thus presented to the food inspector is a delicate one, which the chemist is glad to turn over to him.

Our observations upon butter included several samples and various conditions. For a portion of these samples a special churning was made by the dairy department of the Kansas State Agricultural College, December 28, 1909. Eight hundred and fifty-two pounds of cream, testing 26 per cent butter fat, were churned, and 261 pounds of butter were obtained. A sample taken from the churn showed 14.61 per cent of water. One hundred and twenty pounds of this butter were used in four experiments, as follows: (1) Sixty pounds were packed in a tub and placed in the cold-storage room of the dairy department December 29, 1909. The tub was lined with parchment paper, and a piece of cloth with one-fourth pound of salt was placed over the top and the tub was closed with a wooden lid. (2) Fifty one-pound prints separately wrapped in single parchment papers and paraffined cartons were put in a wooden case and placed in the same storage as (1). (3) Five one-pound prints separately wrapped in single parchment papers and paraffined cartons were placed in cold storage December 29, 1909. (4) Five one-pound prints wrapped in single parchment papers and paraffined cartons were placed five feet from a radiator in a room kept at ordinary living temperature December 29, 1909. These prints were protected by a wire screen covering. The accompanying tables show the weights observed upon each of the packages.

The case remained unaltered in weight up to the time of the conclusion of the observations, July 6, 1910.

The tub contained 64½ pounds of butter, which lost 3½ pounds in weight up to July 6, 1910. The weight of the container was the

same at the end of the experiment as at the beginning. It was thoroughly soaked before the butter was packed in it and during the latter part of the period of observation it was wet in the storage room on account of melting ice on the floor.

Of the five prints kept in cold storage and separately exposed (3) the loss ranged from 9.9 grams to 14.5 grams up to July 6, 1910. The average loss was 12.4 grams, or less than one-half ounce.

The five prints stored in the room at living temperature were kept under observation until April 22, 1910, when the experiment ended. The losses ranged from 22.8 grams to 26.9 grams, the average being 25 grams. As an ounce is about 28.3 grams, the average loss when freely exposed in a warm room for nearly four months was less than an ounce, and did not reach that amount in any case.

In addition to the butter churned at the College some commercial samples were secured, as follows: (5) Five single prints, Primrose brand, manufactured by the Continental Creamery Company, were obtained January 13, 1910. This butter was wrapped in double parchment paper and enclosed in paraffined cartons covered by the outside paper wrapper. These prints were placed in an open refrigerator without ice, but which stood in a well ventilated hall heated to a certain extent by radiators.

(6) Nine prints of Concordia Creamery butter, which were wrapped in double parchment papers, paraffined cartons and outside wrappers. These prints were placed in the cold storage of the dairy department February 15, 1910, and held there until July 6.

(7) A thirty-pound case of Meadow Gold butter, manufactured by the Continental Creamery Company, was obtained March 3, 1910. In this case the prints were wrapped in double parchment papers, paraffined cartons and outside wrappers. The case was a Continental Creamery Company paraffined fiber-board carrying case. This case of butter was placed in cold storage March 4 and held until July 6, when the experiment ended. The results upon the commercial butters are shown in detail in the accompanying tables, and may be summarized as follows:

Weight of 50-print Case and 60-pound Tub K. S. A. C. Butter.

(Placed in storage December 29, 1909.)

Date of weighing.	Gross wt., case.	Gross wt., tub.	Date of weighing.	Gross wt., case.	Gross wt., tub.
December 29, 1909.....	59¾ lbs.	76 lbs.	March 9, 1910.....	59¾ lbs.	73½ lbs.
January 5, 1910.....	" "	76 "	March 23, 1910.....	" "	73 "
January 12, 1910.....	" "	75½ "	April 7, 1910.....	" "	73 "
January 19, 1910.....	" "	75 "	April 22, 1910.....	" "	72¾ "
January 26, 1910.....	" "	74 "	May 11, 1910.....	" "	72¾ "
February 2, 1910.....	" "	73¾ "	June 14, 1910.....	" "	72½ "
February 17, 1910.....	" "	73¾ "	July 6, 1910.....	" "	72½ "
February 23, 1910.....	" "	73¾ "	Loss.....	None.	3½ lbs.
March 2, 1910.....	" "	73½ "			

Weights of Five Prints of K. S. A. C. Creamery Butter in Storage.

(Wrapped in parchment paper and paraffined cartons.)

Date of weighing.	Weight of print No. 1.	Weight of print No. 2.	Weight of print No. 3.	Weight of print No. 4.	Weight of print No. 5.
	<i>gms.</i>	<i>gms.</i>	<i>gms.</i>	<i>gms.</i>	<i>gms.</i>
Dec. 29, 1909.....	482.6	477.4	484.5	475.1	488.7
Jan. 5, 1910.....	481.5	476.8	483.9	474.5	487.9
Jan. 12, 1910.....	481.5	476.6	483.8	474.4	487.7
Jan. 19, 1910.....	481.5	476.9	483.9	474.5	487.7
Jan. 26, 1910.....	481.5	476.6	483.6	474.2	487.3
Feb. 3, 1910.....	480.0	476.0	482.6	473.2	486.2
Feb. 7, 1910.....	479.6	475.7	482.4	473.0	486.2
Feb. 14, 1910.....	479.6	475.7	482.4	472.9	486.2
Feb. 22, 1910.....	479.2	475.0	482.1	472.8	486.0
Feb. 28, 1910.....	479.1	474.8	481.5	472.4	486.1
Mar. 2, 1910.....	476.2	472.4	478.8	469.8	483.2
Mar. 9, 1910.....	474.7	471.0	476.7	468.2	481.8
Mar. 23, 1910.....	474.1	470.8	476.7	468.2	481.8
Apr. 2, 1910.....	472.1	469.2	473.2	464.0	480.1
Apr. 22, 1910.....	469.2	467.7	472.2	461.2	478.5
May 11, 1910.....	468.5	465.5	472.0	461.9	476.6
Jun. 14, 1910.....	472.0	468.2	472.0	462.4	478.2
Jul. 6, 1910.....	472.7	467.1	470.5	460.6	475.5
Loss.....	9.9	10.3	14.0	14.5	13.2

Average loss, 12.4.

Weights of Five Prints of K. S. A. C. Butter Kept Five Feet from a Radiator.

(Wrapped in parchment paper and paraffined cartons.)

Date of Weighing.	Weight of print No. 6.	Weight of print No. 7.	Weight of print No. 8.	Weight of print No. 9.	Weight of print No. 10.
	<i>gms.</i>	<i>gms.</i>	<i>gms.</i>	<i>gms.</i>	<i>gms.</i>
Dec. 29, 1909.....	477.3	477.0	472.8	479.5	476.0
Jan. 5, 1910.....	466.5	468.6	464.7	469.9	467.3
Jan. 12, 1910.....	463.4	465.8	461.2	466.3	464.0
Jan. 19, 1910.....	461.4	463.7	459.3	463.9	462.1
Jan. 26, 1910.....	460.5	462.7	458.3	462.8	460.8
Feb. 3, 1910.....	459.2	461.3	457.0	461.3	459.3
Feb. 7, 1910.....	458.9	461.0	456.8	460.9	459.0
Feb. 14, 1910.....	458.4	460.5	456.2	460.2	458.4
Feb. 22, 1910.....	457.5	459.6	455.8	459.3	457.5
Feb. 28, 1910.....	457.3	459.4	455.2	459.1	457.4
Mar. 2, 1910.....	457.0	459.2	455.0	458.9	457.2
Mar. 9, 1910.....	456.2	458.4	455.1	457.9	456.2
Mar. 23, 1910.....	454.2	457.1	453.1	456.5	454.6
Apr. 2, 1910.....	452.0	454.8	451.1	454.0	452.1
Apr. 22, 1910.....	450.6	453.3	450.0	453.0	451.0
Loss.....	26.9	23.7	22.8	26.5	25.0

Average loss, 25.0.

Data on Five Prints Primrose Butter, Manufactured by Continental Creamery Company.

(Placed in an open refrigerator in hall January 14, 1910.)

Date of weighing.	Weight of print No. 1.	Weight of print No. 2.	Weight of print No. 3.	Weight of print No. 4.	Weight of print No. 5.
	<i>gms.</i>	<i>gms.</i>	<i>gms.</i>	<i>gms.</i>	<i>gms.</i>
Jan. 14, 1910.....	484.4	486.7	486.6	485.3	490.8
Jan. 19, 1910.....	480.0	484.7	485.3	483.2	487.5
Jan. 26, 1910.....	476.2	482.7	484.0	480.1	485.0
Feb. 3, 1910.....	478.2	481.3	482.8	477.7	483.0
Feb. 7, 1910.....	471.6	480.9	482.4	477.2	482.6
Feb. 14, 1910.....	470.3	480.2	481.3	476.4	481.6
Feb. 22, 1910.....	469.2	479.5	481.1	475.4	480.6
Feb. 28, 1910.....	468.9	479.4	481.1	475.2	480.3
Mar. 2, 1910.....	468.5	479.1	480.7	474.9	480.0
Mar. 9, 1910.....	467.1	478.1	479.6	473.5	478.5
Mar. 23, 1910.....	464.9	476.8	478.1	471.9	476.5
Apr. 2, 1910.....	463.0	475.1	476.0	470.2	474.1
Apr. 22, 1910.....	462.1	474.5	475.3	469.5	473.3
Loss.....	22.3	12.2	11.3	15.8	17.5

Average loss, 15.8.

Data on Nine Prints Concordia Creamery Butter.

(Received February 15, 1910, and placed in storage. Wrapped in regular Concordia wrapper—double parchment, paraffined carton and outside wrapper.)

Date of weighing.	Print No. 1.	Print No. 2.	Print No. 3.	Print No. 4.	Print No. 5.	Print No. 6.	Print No. 7.	Print No. 8.	Print No. 9.
	<i>gms.</i>	<i>gms.</i>	<i>gms.</i>	<i>gms.</i>	<i>gms.</i>	<i>gms.</i>	<i>gms.</i>	<i>gms.</i>	<i>gms.</i>
Feb. 15, 1910.....	473.9	475.2	474.4	469.9	471.0	467.5	472.7	472.6	463.5
Feb. 22, 1910.....	473.9	475.2	474.1	469.4	470.6	467.5	472.6	472.2	463.0
Mar. 2, 1910.....	473.0	475.1	473.9	468.6	470.7	467.4	472.4	472.2	462.7
Mar. 9, 1910.....	472.8	475.0	473.7	468.2	470.5	466.8	472.2	471.9	462.2
Mar. 23, 1910.....	472.2	474.7	473.5	467.4	470.5	466.5	472.0	471.6	461.5
Apr. 2, 1910.....	471.4	474.1	472.2	466.2	470.3	466.0	471.0	470.8	460.0
Apr. 22, 1910.....	471.0	473.2	471.6	464.7	469.9	464.6	470.0	470.0	458.5
May 11, 1910.....	470.5	472.7	470.8	463.4	469.2	464.0	469.5	469.3	456.8
Jun. 14, 1910.....	470.5	473.2	470.7	462.0	469.1	463.0	469.0	468.1	456.6
Jul. 6, 1910.....	470.5	473.0	470.2	461.8	469.0	462.5	468.8	467.8	455.4
Loss.....	3.5	2.2	4.2	8.1	8.5	5.0	3.9	4.8	8.2
Average loss, 5.4.									

Data on Case of Thirty Prints of Meadow Gold Butter, Continental Creamery Company.

(March 4, 1910. Case is the C. C. paraffined pasteboard carrier.)

Date of weighing.	Weight.	Date of weighing.	Weight
Mar. 4, 1910.....	33½ lbs.	May 11, 1910.....	33½ lbs.
Mar. 23, 1910.....	33½ "	Jun. 14, 1910.....	33½ "
Apr. 7, 1910.....	33½ "	Jul. 6, 1910.....	33½ "
Apr. 21, 1910.....	33½ "		

The five separately exposed prints of Primrose butter stored in the open refrigerator lost amounts ranging from 11.3 to 22.3 grams, the average loss being 15.8 grams, or slightly more than half an ounce, between January 14 and April 22.

The nine prints manufactured by the Concordia Creamery Company lost from 2.2 to 8.5 grams between February 15 and July 6. The average loss was 5.4 grams—less than one-fifth of an ounce.

The thirty-pound case of Meadow Gold butter was under observation from March 4 to July 6, but remained unaltered in weight throughout the entire period.

The results with butter show that prints wrapped in parchment paper and paraffined carton and packed in cases remain constant in weight, but that such prints on prolonged exposure out of the case will lose slightly. It is evident that loss during the time that the retailer would have them out of the case would be unappreciable. Butter packed in wooden tubs will lose somewhat in weight, the water evidently being carried through by the fiber of the wood and evaporating.

"No man ought to cross the threshold of this year without a steadfast purpose to make the best possible use of the opportunities it brings him."

Resolutions Adopted by the Association of State and National Food and Dairy Departments.

At a meeting the Association of State and National Food and Dairy Departments, held in New Orleans from November 28 to December 2, the following resolutions were unanimously adopted:

“Resolved, That we are gratified at the progress already made to secure uniformity in food and drug legislation, and urge that this association use its best efforts to bring about complete uniformity in all food and drug laws.”

“WHEREAS, It is the belief of this association that the enforcement of the national food and drugs act of June 30, 1906, and the enforcement of the pure food laws of the various states, which laws are patterned thereafter, are seriously hampered by the absence of legal standards for foods; therefore, be it

“Resolved, That this association urges upon Congress the enactment of a law providing for the appointment by the President of the United States of a food standards commission, to be composed of food law officials and chemists, state and national, connected with the enforcement of food laws, and representative manufacturers, producers and dealers in foods, which commission shall fix food standards to be used in the enforcement of the food and drugs act.

“Resolved, That it is the judgment of this association that each state should enact suitable legislation to secure sanitary inspection of all places where food or drugs are prepared or sold or manufactured.

“Resolved, That this association favors the enactment by Congress and the various states of a weight or measure branding law, and that any such law be so framed as to make fair and reasonable allowance for the inevitable variations of weight or measure due to shrinkage, evaporation or other natural causes, and the unavoidable slight variations attendant upon the weighing or measuring of individual packages; and that the interests of consumers, manufacturers and dealers alike demand that weight and measure laws, like all food laws, should be uniform.

“Resolved, That experience has shown that efficiency in food-control officials increases with experience, and the people are entitled to have continuously, in connection with the enforcement of food-control laws, the services of trained, experienced, administrative and technical men. Therefore, this association urges that the enforcement of food-control laws be divorced from politics.”

“WHEREAS, There appear in many of the papers, journals and magazines of this country false and misleading statements concerning the therapeutic value of so-called patent or proprietary preparations, which are intended to and do deceive the public; therefore, be it

“Resolved, That this association deprecates such advertisements as being a menace to the public welfare and contrary to the spirit of the national food and drugs act.”

Special attention is invited to the resolution on patent medicine advertisements, particularly those contained in the religious press and church papers of the country. It seemed to be the sense of many of the individual members of the association that publications bearing fraudulent advertisements should be barred from the United States mails. Here is hoping that that day may speedily come!

The Social and Legal Value of Vital Statistics.

Physicians, individually and as a class, have long realized the value of trustworthy vital statistics as a basis of knowledge regarding diseases. Owing to their efforts in urging the passage of vital registration laws, the general public, members of legislatures, and even physicians themselves, have largely lost sight of the non-medical value of vital statistics. The passage of such laws has come to be regarded as a favor to physicians and as a matter in which the general public has little if any concern. Yet the recording of births and marriages is of no advantage to physicians as such; they are interested in vital statistics only as these contribute to sociologic knowledge. The registration of deaths is useful to the medical profession only in affording information regarding the frequency and mortality of disease. Hence the interest of the medical profession in vital statistics legislation is, at most, entirely impersonal and altruistic.

The subject, however, should be of the greatest interest to all citizens, because it is important that every individual should be able, if necessary, to produce legal evidence of his birth and parentage. It is important that records should be made of the time, place, manner and cause of death of every human being. Registration of vital facts is of the greatest value in determining questions involving parentage, legitimacy, inheritance, property rights, marriage and divorce—in fact, in most of the social or business relations of life. The value of proper registration of these essential facts has long been recognized by all civilized nations except our own. The utter neglect of vital registration by many of our states is a constant source of astonishment to visitors from other countries. Our neglect of such fundamental and truly vital matters can be accounted for only by the comparative newness of our social organization. Each state, as it becomes older, and as social relations become more complicated, will find it necessary to provide some effective means for registering essential facts regarding its citizens. It is particularly strange that, in the Southern

states, where the possibility of racial admixture is the greatest, and where even a suspicion of tainted ancestry carries with it the gravest social consequences, there has been little effort to make or to preserve legal records of birth. The reason for this neglect must surely be that the legal and social importance of vital statistics registration has never been properly brought to the attention of the public leaders in the South, for certainly when it is appreciated these states will not delay the adoption and enforcement of appropriate laws on the subject. It is not conducive to national pride to know that such countries as New South Wales, Tasmania, New Zealand, Ceylon, Jamaica, Finland, Roumania, Bulgaria, Japan and Chili are far ahead of the United States in the proper registration and preservation of records on vital matters. Still less gratifying to our self-satisfaction is the statement that the United States in this particular must be classed with Africa and Borneo.

—Journal of the A. M. A.

STATE WATER SURVEY No. IX.

By E. H. S. BAILEY, Ph. D., Director, and C. C. YOUNG, A. B., Analyst.

We have to report the following analyses made in our laboratory since date of last report. These analyses are mostly of city and proposed city supplies and school wells and cisterns. Numerous analyses of Lawrence wells are to be found herewith, due to the fact of a slight typhoid fever outbreak, the town people wishing to make sure that their private supplies were in good condition.

SANITARY ANALYSES OF WATERS.

No.	CITY.	Dates, 1910, 1911.	N. in free NH ₃ .	N. in Alb. NH ₃ .	N. in NO ₂ .	N. in NO ₃ .	Cl.	Solids.....	Loss on ignition.....	Oxygen consumed.....
199	Altoona,** L. S. Jones*	11 28	.....	.....	.....	.....	2440.0	4,860	.....	.....
200	Arkansas City, (test well).....	1 4	0.070	0.188	None.	0.001	271.0	1,004	224	3.20
201	Atchison, city supply.....	1 9	0.014	0.198	0.10	None.	30.0	521	185	3.24
202	Bronson:									
	(a) C. Dans.....	10 25	.....	.....	0.30	None.	4.0	80	46	5.52
	(b) C. Dans.....	10 25	.....	.....	0.30	0.005	3.0	114	50	5.76
	(c) C. Dans.....	10 25	.....	.....	1.50	0.002	24.4	2,786	482	2.32
206	Chanute, George Koeppling.....	12 8	0.026	0.092	10.00	None.	44.0	227	170	0.60
206	Chanute, city water.....	11 10	0.030	0.180	None.	None.	10.0	334	129	5.04
206	Coffeyville, Verdigris.....	11 17	0.072	0.214	None.	None.	29.0	267	108	4.56
207	El Dorado, school well.....	12 5	0.026	0.110	2.00	None.	12.0	375	132	0.48
208	Emporia.....	11 14	0.060	0.244	0.004	0.0005	18.0	704	170	4.44

No.	CITY.	Dates 1910. 1911.	N. in free NH ₃	N. in Alb. NH ₃	N. in NO ₂	N. in NO ₃	CL	Solids	Loss on ignition	Oxygen consumed
239	Peabody, pro- posed city sup- ply*	10 26					30.0	629	208	
240	Stafford, city supply	12 17	0.630	0.068	1.50	None.	54.0	359	102	1.38
241	Tecumseh, Miss Elm re.	10 24	0.026	0.152	40.00	0.002	85.0	1,038	507	0.276
243	Wichita, Cudahy Packing Co.	1 2	0.018	1.086	1.00	None.	574.0	1,557	320	3.96
244	Willow Springs, school well	11 25			0.70	0.040	17.0	1*221	288	2.04
245	Yates Center: *									
	(a) Dist. No. 5.	8 9			0.70	None.	6.0	122	60	7.74
	(b) " No. 8.	8 9			25.00	Trace.	55.0	529	196	0.35
	(c) " No. 20.	8 9			0.30	None.	16.0	482	180	0.192
	(d) " No. 22.	8 9			2.50	None.	9.0	342	99	1.682
	(e) " No. 17.	8 9			3.50	Trace.	66.0	493	134	3.40
	(f) " No. 51 N	8 9			None.	None.	15.0	138	35	0.192
	(g) " No. 51 S	8 9			5.00	None.	64.0	1,141	194	0.256
	(h) " "	8 9			0.30	None.	32.0	615	185	0.99
	(i) " No. 62.	8 9			4.00	None.	59.0	362	113	0.99
	(j) Jt. dis. No. 3.	8 9			40.00	0.007	161.0	1,212	435	1.18
	(k) Dist. No. 38.	8 9			4.00	None.	22.0	353	153	0.192
	(l) No. 45.	8 9			0.50	None.	10.0	168	97	21.47

DETAILS.

199. Altoona.—This a qualitative examination to test whether or not the water had any particular medical properties. The total solids amount to 4.86 grams per liter, the most of which is sodium chloride, it being 4.026 grams per liter. The other 0.8 of a gram are composed of calcium and magnesium bicarbonate, sodium bicarbonate, sodium carbonate and a small amount of sodium sulphate.
200. Arkansas City.—This is a test well for extension of city supply. The organic matter in this water, as indicated by the oxygen consumed, free and albuminoid ammonia, is very high. Not recommended for extension of supply.
201. Atchison.—City water at intake. Very high in organic matter. Efficient purification process recommended.
202. Bronson.—(a) and (b). These are very soft waters, but there is too much organic matter present for them to be called good waters; (c) was very turbid and contained an immense amount of mineral matter. This water also contained a large amount of organic matter, and was not recommended as a good water.
203. Chanute (Geo. Koepfing).—This water is evidently a polluted water from sandstone formation. There has been sickness in Mr. Koepfing's family, and it was suggested that the well be abandoned.
205. Chanute.—Analysis made of city water of Chanute for Professor Hoad, state sanitary engineer, who used the analysis in consultation with city authorities in regard to water filtration plant.
206. Coffeyville.—Analysis made for Professor Hoad of the Verdigris river at low-water stage, for matter of reference and engineering data.
207. El Dorado.—A water sent in by Mr. N. C. Hunt, El Dorado, from school well, district No. 1, Butler county. As far as chemical analysis can show, this water is not contaminated.

208. Emporia.—Analysis of Cottonwood river at low-water mark, made for professor Hoad for engineering data. Results of this analysis show that the water contained 100 parts per million of total solids, and about twice as much sulphate as highest analysis made by State Water Survey of 1909. This was probably due to the exceptionally low water, and hence its concentration.
210. Fowler.—(a) Dick well; (b) Godschalk well. These samples were sent in by Doctor Edmundson, of Fowler, with intention of treating a typhoid fever epidemic in two families. There is nothing in the chemical analysis of these waters to indicate that they are very seriously polluted.
211. Fredonia.—A city supply from Fall river. Analysis made at request of Professor Hoad. This sample was taken at the time of dry weather flow.
12. Fall river.—(Special analysis; see page 23.)
213. Greensburg.—These analyses were made for Doctor Gardner, of Greensburg. (a) City well; (b) Burk's well; (c) Long's well. These analyses were made to determine whether or not the city well was affecting the Burk well and the Long well. The city well had been closed for a number of years and was undoubtedly polluted. However, as far as chemical analysis can show, it has no effect on either the Burk well or the Long well.
214. Havensville.—Analysis made for Dr. Thomas Toothaker, of school well of district No. 3, Jackson and Pottawatomie counties. This water contains a large amount of organic matter, and the suggestion was made that the well be thoroughly cleaned and protected from surface pollution after modern ideas, and a second analysis made later to determine if the water is fit for school drinking purposes.
215. Herington.—Analyses made for Mr. A. J. McAllister, superintendent of schools. (a) Private residence; (b) Lincoln school; (c) McKinley school; (d) Washington school. As far as chemical analysis can show (a), (b) and (d) are not polluted. However (c) indicates a slight contamination by organic matters. It was suggested that this well be carefully cleaned and protected, and a second analysis made to see whether the water was sufficiently pure for school water.
216. Independence.—Analysis made of present city supply, at request of Professor Hoad, to be used in conference with city authorities in regard to proper method of water treatment. The present supply is taken from Verdigris river, and should be subjected to some method of purification before being used for municipal supply.
217. Lyndon.—Analysis made for Dr. French M. Smith, county health officer. It shows that the well water contains very large amounts of organic matter, and also of mineral matter. It is not safe for use. The analysis of cistern water shows that it must receive a large amount of surface drainage. The water is so bad that it is little better than partially purified sewage. The cistern should be thoroughly cleaned out and rebuilt so as to keep out surface drainage.
218. Lawrence.—Analysis made for Mr. Robert K. Johnson, to find whether or not it should be used for drinking water. It was so grossly polluted with organic matter that the well has been abandoned.

219. Lawrence.—Analysis made for Mrs. Harris, to determine its fitness for drinking purposes.
220. Lawrence.—Professor Blackmar. Analysis made to see whether or not the deep well private supply had been affected by ground water pollution. The chemical analysis showed no evidence of pollution.
221. Lawrence. Analysis of well water. The water regarded as suspicious.
222. Lawrence.—Mrs. Lowman, 841 Mississippi street. It is very high in organic matter, as indicated by high oxygen consumed, free and albuminoid ammonia. Advice was given that well be closed, as it was in a district where it was very likely to be infected as well as polluted.
223. Lawrence—Dean Templin. Analysis made of the spring on Dean Templin's place at edge of town to see whether it was a wholesome supply. As far as chemical analysis can show there is no trace of pollution.
224. Leavenworth.—This water was sent in by J. L. Everhardy. The only evidence of pollution was in the high nitrates, and it was suggested that the well be thoroughly cleaned and a second analysis made to determine its potability.
225. Lawrence.—Analysis made for W. E. Nevins, 923 Louisiana street. This well is grossly polluted.
226. Lawrence.—Analysis made for G. W. Steeper, 924 Louisiana street. This well is grossly polluted.
227. Lawrence.—Analysis made for Miss Maud Smelser of well water from 936 Connecticut street. This water is grossly polluted, and it was suggested that the well be closed.
228. Lawrence.—Tripp Club, 1338 Ohio street. This analysis of Tripp Club was made to check up results of bacteriological department. The water is probably not sufficiently pure for good drinking water.
229. Lawrence.—Well at 431 Illinois street, Mr. A. J. Campbell. This water is grossly polluted, and it was advised that the well be closed.
230. Lawrence.—Well at 735 Illinois street, Mrs. Chas. Esterly. This water is grossly polluted, and well was closed at suggestion of laboratory.
231. Mound Ridge.—Sample was too small for complete analysis. This is a proposed city supply, and analysis was made at request of Professor Hoad. This is a very hard water, containing about 3 grams per liter of calcium sulphate. For this reason it is unfit for city supply.
232. Mound City.—Analysis was made at request of Professor Hoad. Sample taken from Sugar creek, to be used as proposed city supply. This is a relatively soft water, and contains considerable organic matter, which is to be expected in a surface water. However, the chlorine is very low, indicating that the organic matter is from vegetable sources rather than animal.
233. Mulvane.—Analysis made for Dr. R. E. Michener, Mulvane. Sample was from Oscar Kramer's well. This water is contaminated with considerable organic matter, and should not be used without boiling until some other source of supply is found.

234. Marion.—(a) Old well; (b) new well. This is a city supply, and analysis was made for William Constant, commissioner. The old well is just about one-half as hard as new well. The new well is so hard that it would be unfit for domestic use.
235. Newton.—Analysis made for Mayor Dunkelberger of present city supply to see whether or not it was in good sanitary condition. As far as chemical analysis can show, there was no pollution.
236. Newton.—Analysis made for Dr. L. T. Smith. As far as chemical analysis can show this water is not contaminated.
237. Neosho Falls.—This water was sent in at request of Dr. Kellenberger from school district well. It was suggested that well be properly protected before being used farther as school supply. The chemical analysis does not show any large amount of organic matter, however.
238. Osawatomie.—Analysis made for Dr. E. C. Pace, of Osawatomie. (a) Mrs. K. D. Roberts' well. (b) Well at produce company's store. Both of these wells showed very marked contamination, and at our suggestion the produce company's well was closed. Further examination (c) was made of Mrs. Roberts' well. A ditch into which the laundry empties its drainage runs very close to both of these wells. Also, within 100 feet of the Roberts' well is an old cesspool that was at one time a well. (c) See special analysis, page 23.
239. Peabody.—Partial analysis of the water from Peabody, made at request of Professor Hoad, as this was proposed city supply. Analysis made on filtered sample. Sulphate (SO₄) 139.2.
240. Stafford.—Analysis made of Stafford city supply to keep control of its sanitary condition. As far as chemical analysis can show there is no evidence of pollution.
241. Tecumseh.—Analysis made for Miss Grace Elmore.
243. Wichita.—Analysis made for Cudahy Packing Company. This is the water that the employees of the company use as drinking water. As far as chemical analysis can show it is not polluted.
244. Willow Springs.—School well. This water contains considerable organic matter, as indicated by high nitrites, nitrates and oxygen consumed.
245. Yates Center.—These analyses of school district wells were made at request of Dr. E. K. Kellenberger, county health officer. The only well that shows marked pollution is district No. 3, joint. The two cisterns should be cleaned out thoroughly as the analysis indicated that they were very dirty.

SPECIAL ANALYSES.

212. Fall River.—The water-bearing formations of Kansas usually yield what is termed hard waters; however, there are at least two distinct formations from which soft waters may be obtained. These are the Dakota sandstones of western Kansas, and the sandstones in the Lawrence shales. The latter are sometimes termed, at the southern outcropping, the Chautauqua sandstones. The Chautauqua sandstones give us the best examples of soft waters that we have in the state. In fact, they resemble very closely the waters which come from the massive granite in the Appalachian system. These water-bearing sandstones extend almost entirely across the state from

Leavenworth to Sedan. Mr. Adams has given a good description of them in volume III of the Kansas Geological Survey. The authors have recently had occasion to examine three springs near Fall River in Elk county, the analyses of which appear below, the determinations being calculated to their probable combination to better show the character of the water.

ANALYSES—Grams per Liter.

	(1)	(2)	(3)
NaCl.....	0.0132	0.0099	0.0066
Na ₂ CO ₃	0.0060	0.0080	0.0052
Na ₂ SO ₄	none	trace	0.0011
CaCO ₃	0.0073	0.0097	0.0068
MgCO ₃	0.0052	0.0061	0.0052
Fe ₂ O ₃ , Al ₂ O ₃	trace	trace	0.0003
SiO ₂	0.0127	0.0152	0.0154
Total grams.....	0.0444	0.0489	0.0386
Total grains per gallon.....	2.359	2.856	2.237

In volume VII of the Kansas Geological Survey one of us (Bailey) has given under "Soft Water Group" analyses of several other springs in these localities, and a glance at their location will show, in a measure, their distribution.

Grains per Gallon.

Linwood Spring, Leavenworth county.....	9.90
California Spring, Franklin county.....	6.13
Kansas Clarus Spring, Woodson county.....	20.83
Delaware Spring, Wilson county.....	8.27

The analyses which appear above show these waters to be as soft as some of the most noted springs in the world. The authors intend, as time goes on, to make a complete survey of all the springs in the Lawrence shales yielding soft water.

238c. Osawatomie.—On October 20, 1910, Dr. E. C. Pace introduced into an old well near Mrs. K. D. Roberts' well 50 pounds of salt. Samples were taken from time to time as indicated below, and chlorine determinations made to see whether or not the old well was polluting Mrs. Roberts' well. Results and conclusions given below. Results expressed in parts per million:

October 20.....	160	October 29.....	158
" 21.....	158	" 30.....	160
" 22.....	158	November 1.....	158
" 23.....	162	" 2.....	164
" 24.....	158	" 3.....	160
" 25.....	158	Rain December 27.....	
" 26.....	158	December 30.....	164
" 27.....	160	" 31.....	164
" 28.....	158		

There was no marked increase in the chlorine during this time, so the conclusion is that there is no connection between Mrs. Roberts' well and the old well. From this it is probable that Mrs. Roberts' well is being polluted more from surface drainage from the laundry ditch, and from general unsanitary conditions in the neighborhood, than from the old well, which has been used as a cesspool.

Protection of Wells.

By C. C. YOUNG, Chemist, State Board of Health, Water Laboratory.

The necessity of protecting wells absolutely against any chance of pollution from surface drainage or infiltration of water just below the surface of the ground is a well-known principle of sanitary science. However, the hazy ideas that are prevalent as to ways

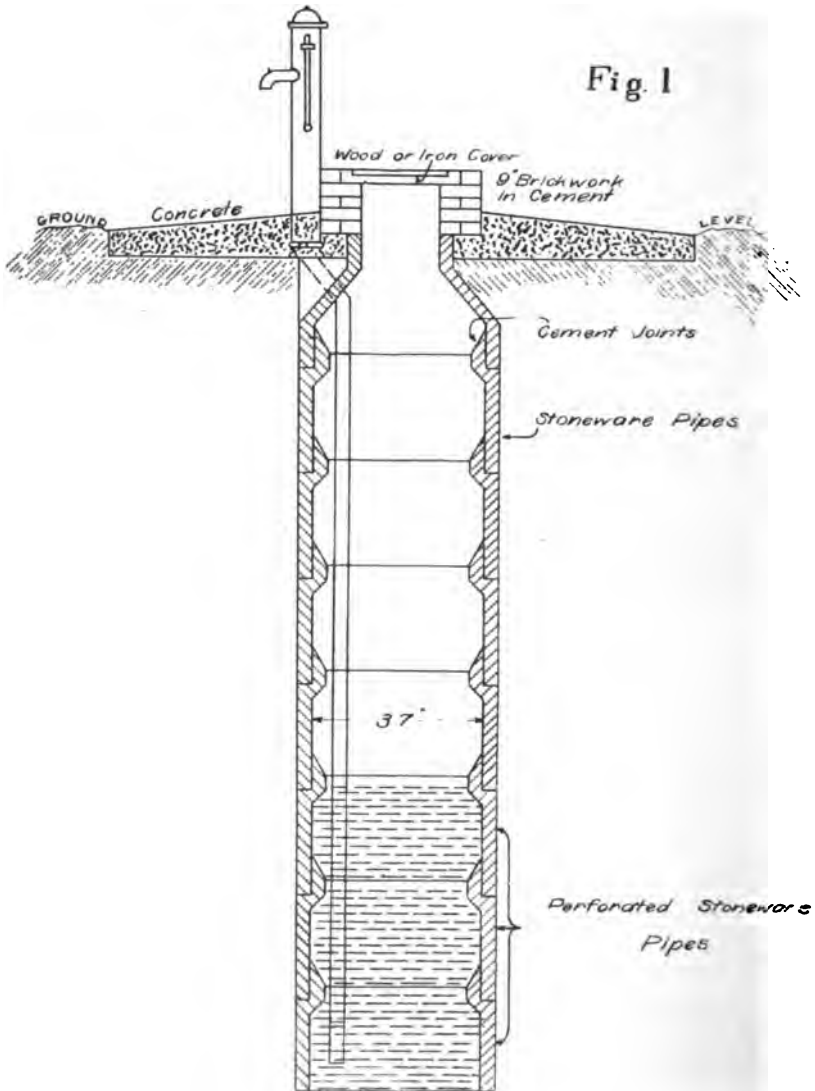


FIG. 1.

and means of effecting this protection have led the writer to make the following notes on construction of wells.

The curb of the well should be twelve to fourteen inches above the surface of the ground. At the surface of the ground there should be a platform of concrete or stone, sloping away from the walls of the well. The edge of this platform should be at least four feet from the wall. The walls themselves should be so constructed that no water can pass through them without having percolated through at least eight to twelve feet of soil, depending upon

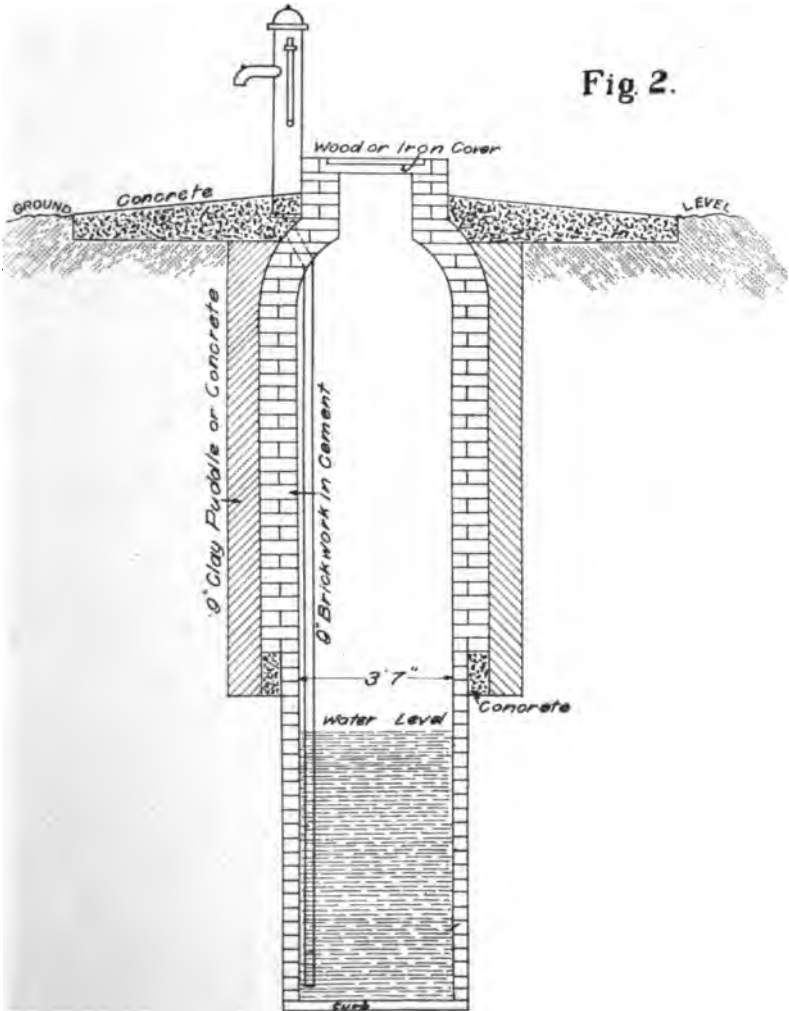


FIG. 2.

the character of the soil. The top of the well should be covered with a water-tight cover of wood, concrete or stone. If wood is used, nothing should be considered but shiplap or tongue-and-groove lumber.

Figures 1 and 2 show designs approved by the Rural District Council of Shelmsford, England. The first admits of very little variation in material, bell and spigot vitrified clay pipe being used. The second allows considerable variation in material, depending on local conditions. Paving brick are preferable to concrete or stone.

Bored, drilled or driven wells usually have a shallow pit to protect the pumping apparatus from frost. These all should be constructed and protected with as much care as the dug well. Drainage entering this pit, either by the direct route of falling through the cover or percolating through a few inches of soil, is cumulative and will follow the path of least resistance down the casing and in time grossly pollute the water below.

Old wells can be remodeled by raising the curb and digging out the dirt on the outside of the wells, and then plastering the walls with cement plaster—two parts sand and one part of cement. The well should then be encased with clay puddle or concrete. The final step would be a platform on the surface of the ground sloping away from the well.

By carefully following these directions and locating the well at least 100 feet from a privy or cesspool, there need be little danger of having a contaminated well unless the ground water itself is polluted by larger sources than privy or cesspool. Or again, the privy or cesspool may be in the same water level that furnishes the well with water. In this case the well should be abandoned at once.

Recent Advances in Sanitary Engineering.

By N. D. BAKER, Engineer Inspector, California State Board of Health.

WATER STERILIZATION BY THE USE OF CHLORIDE OF LIME.

Bleaching powder, or the commercial "chloride of lime," has long been employed as a deodorizer and disinfectant, but it is only within the last year or two that it has come into use in the treatment of public water supplies on a large scale. Although of such recent origin, the process has already been adopted by many cities throughout the United States and Canada. It is one of the surest and cheapest ways of rendering safe for drinking purposes waters from slightly polluted sources.

It is not claimed for the bleaching powder process that it removes the organic matter present. It merely kills the "germs" The two fields open to this form of treatment are :

1. Treatment by disinfection alone of slightly polluted waters where the sewage matter is enough to be dangerous, but not enough to cause color or disagreeable odors; also sources that are subject to occasional pollution only.

2. Treatment of more seriously polluted waters by both filtration and disinfection.

Most of the sources in California where this treatment is applicable fall into the first named class. A number of our towns have surface sources that are never above suspicion and that are frequently subject to serious pollution. The fact that a water is clear and cool and not offensive to sight or taste does not necessarily mean that it is safe for drinking.

CHEMICAL REACTION.

In a paper read before the American Waterworks Association in 1909, Dr. J. L. Leal explains the chemical action of the bleaching powder essentially as follows: Bleaching powder is unstable and when put into water breaks up into chloride of calcium and hypochlorite of calcium. The former is inert, and the latter reacts with the carbon dioxide in the water, forming carbonate of calcium and hypochlorous acid. In the presence of oxidizable matter the hypochlorous acid breaks up, giving off its oxygen, hydrochloric acid being left. This acid then unites with the carbonate, forming calcium chloride. The process is wholly an oxidizing one, the work of oxidization being done entirely by the oxygen set free from the hypochlorous acid in the presence of oxidizable matter.

Objection may be raised that the bleaching powder may be harmful when introduced. Such is not the case, for no free chlorine is released into the water and the only effect is a slight increase in the total hardness. This is so slight (only two or three parts per million) that delicate analyses could hardly detect it. Mr. Geo. E. Johnson states that a person drinking a gallon a day of the treated water would be seven thousand years getting as much free chlorine as is sometimes given without danger in a single medicinal dose.

APPLICATION AND COST OF APPARATUS.

It is true that the chemical is a very powerful disinfectant and it is therefore applied in very minute proportions and must not be used without intelligent supervision. Personal errors of attendants

can best be eliminated by the use of well designed dosing apparatus, and such can be obtained from many of the chemical supply houses.

This apparatus consists of a system of solution tanks and various devices for regulating the flow. The cost of the plant need not be excessive. Mr. Charles Gilman Hyde, in making plans for Sacramento, estimated the cost of a plant to treat fifteen million gallons per day at about \$3000, including buildings. At Nashville, Tennessee, dosing apparatus treating fifteen million gallons per day cost \$400. At Montreal, Canada, the plant of the Montreal Water and Power Company treats nineteen million gallons per day; the cost for buildings was \$688 and for apparatus, \$440. The total cost of the Montreal city plant, designed to treat forty million gallons daily, was \$5770.

EFFICIENCY AND AMOUNT USED.

Professor Phelps of the Massachusetts Institute of Technology, found .25 to .40 parts per million available chlorine necessary to sterilize.

Professor Newlands of the Connecticut State Board of Health used one part per million, or about 25 pounds bleach per million gallons of water. This amount removed all *B. coli* and 99.5 per cent bacteria. In using .5 part per million, or 12 pounds per million gallons, he got as good results (99.5 per cent removal). For general work he recommends 1.5 parts per million, or 36 pounds of bleach per million gallons of water.

The Baltimore County Water and Electric Company, of Avalon, Maryland, made experiments with chloride of lime in connection with filtration. They got good results with .25 to 1.5 parts per million of available chlorine.

Mr. A. E. Walden states that .10 grain per gallon or .5 part per million available chlorine gave good efficiency. This is 12½ pounds per million gallons of water.

At the Lawrence Experiment Station in Massachusetts, Clark and Gage found that 1 part per million gave as good bacterial results as the best slow sand filters. They advise 15 pounds to 25 pounds per million gallons or .6 to 1 part per million available chlorine.

Experiments recently made by the department of sanitation of the People's Water Company, of Oakland, Cal., show good bacterial efficiency from the use of .37 part per million available chlorine. The experiments were carried on in the Oakland laboratory

by Mr. B. G. Philbrick, under the direction of Mr. Chas. Gilman Hyde, director of sanitation for the company.

Experiments on Mississippi river water at Quincy, Ill., were made by Mr. W. R. Gelston, superintendent of the Citizens' Water Company of Quincy. He found good efficiency in bacterial removal with 1 part per million available chlorine.

In many of the experiments especial attention was paid to the effect of the treatment on the intestinal organism, *B. coli*. It may be safely assumed that quantities that will eliminate *B. coli* will be an effectual guard against water-carried intestinal diseases. The general consensus of opinion among the experimenters is that, in ordinary cases, 1 part per million of available chlorine will be effectual in removing bacteria. This is about 25 pounds per million gallons of water treated.

PLANTS IN ACTUAL OPERATION.

Mr. Geo. A. Johnson, of the Jersey City Water Supply Company at Boonton, N. J., used at first 36 pounds of bleach per million gallons of water, or 1.4 parts per million of available chlorine. He later found he could reduce this amount to 5 pounds per million gallons, or .2 part per million available chlorine, and still get good results. This was one of the first plants put into operation.

At Montreal, Canada, the Montreal Water and Power Company use 145 pounds per day for nineteen million U. S. gallons. This amount is said to give good results. The plant was put in operation in January, 1910. The Montreal city plant was put into operation in February, 1910, and treats forty million Imperial gallons, or about fifty million U. S. gallons, of St. Lawrence river water per day.

At Harrisburg, Pa., hypochlorite of lime is employed in connection with rapid sand filtration. The operation began in September, 1909. They use .3 part per million available chlorine, and it removes all *B. coli* and gives good results on the removal of total bacteria.

The plant in Minneapolis, Minn., was designed by Mr. F. H. Bass, of the University of Minnesota, and Mr. J. A. Jensen, engineer of the Minneapolis water department. It was put into operation February, 1910, and treats twenty million gallons of water per day, using from 1.3 to 2.6 parts per million available chlorine.

COST OF TREATMENT.

The cost of treatment may be divided into three parts, as follows:

1. *Cost of chemicals alone.* In Massachusetts a chemical bleach can be purchased in carload lots for \$25 per ton, or $1\frac{1}{2}$ cents per pound. Assuming available chlorine of 33 per cent (it frequently runs as high as 40 per cent) we use 25 pounds of bleach to every million gallons of water to give one part per million of available chlorine. At this rate the cost of the chemical is about 30 cents per million gallons. With a view of using the treatment for some of the Oakland supplies, Mr. Chas. G. Hyde, of the People's Water Company, has found that he can get bleach in carload lots at about \$24 per ton, f. o. b. Midland, Mich., and the additional cost for freight would be less than 75 cents per hundred pounds. This would bring the cost in Oakland to about 2 cents per pound in carload lots.

2. *Cost of attendance.* In many cases, especially in small plants, this item need not be considered. The same force that is necessary at the pumping station or the filter plant will be sufficient to look after the application of the bleach. In large plants it may be necessary to have special help for this purpose, but the total cost will be very small in proportion to the water treated.

3. *Interest and depreciation on the investment.* In his estimates for the Sacramento plant, Mr. Hyde placed the additional cost of sterilization at \$2.50 for chemicals, to which is added the interest on the \$3000 investment. The total cost per year for treating the twelve million gallons per day would be a little over \$1000, of which only \$150 is represented as interest on the investment.

WHAT CAN BE EXPECTED OF STERILIZATION.

As has been stated before, we can not expect sterilization alone to take out the excess of organic matter from a grossly polluted water. It is not a universal panacea. The aim of the bleaching powder process is to "kill the germs" and render *safe* water which is already acceptable from the standpoint of color, taste and other considerations.

The estimated average loss to the community of one death from typhoid fever is \$10,000. Is it not a good business proposition to make our water supply safe by expending one-tenth of this amount each year?

Epidemic Anterior Poliomyelitis.

The number of cases and deaths from anterior poliomyelitis (infantile spinal paralysis) that have been reported in this year's epidemic are as follows:

<i>County.</i>	<i>Cases.</i>	<i>Deaths.</i>	<i>County.</i>	<i>Cases.</i>	<i>Deaths.</i>
Atchison	1	0	Nemaha.....	2	0
Brown	15	4	Norton.....	3	0
Chautauqua	2	1	Osborne.....	1	0
Cherokee.....	1	0	Ottawa	2	0
Cheyenne	2	1	Pawnee	1	0
Clark	1	0	Phillips	5	2
Cloud	8	1	Pottawatomie	1	0
Crawford	11	2	Pratt	2	1
Decatur.....	4	1	Reno.....	4	0
Douglas.....	6	3	Republic.....	7	1
Ellis	4	2	Riley.....	6	3
Gove.....	1	1	Rush.....	2	1
Greeley.....	1	0	Saline.....	2	0
Greenwood.....	1	0	Scott.....	1	1
Hodgeman	1	1	Sedgwick	2	0
Jefferson.....	4	1	Shawnee.....	16	4
Jewell.....	1	1	Sheridan.....	2	1
Johnson.....	3	0	Smith	1	0
Kingman.....	2	2	Sumner	1	0
Leavenworth.....	2	1	Wabaunsee.....	5	2
Linn	1	0	Washington.....	2	1
Lyon.....	1	0	Wyandotte.....	33	3
McPherson.....	14	4	Totals.....	189	47
Montgomery	1	1			
Mortality.....				24.86	per cent.

As a people we have not yet learned to economize. One of the virtues we Americans most need is thrift. It is a mere truism to say that luxury and extravagance are not good for a nation. So far as they affect character, the loss they cause may be beyond computation. But in the material sense there is a loss greater than is caused by both extravagance and luxury put together. I mean the needless, useless and excessive loss to our people from premature death and avoidable diseases. Wholly apart from the grief, the suffering and the wretchedness which they cause, the national loss each year has been calculated at nearly twice what it costs to run the federal government. In addition to the state and city health officers and organizations, there is urgently needed a federal bureau of health, to act, so far as the national government properly may, to relieve our people from the dreadful burden.

THEODORE ROOSEVELT.

BULLETIN

OF THE

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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DEACON, Statistician.

No. 2.

FEBRUARY, 1911.

VOL. VII

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Board of Health Notes, page 47.

Keep everlastingly at it.

Most of your troubles are imaginary.

High living—low resistance.—*Shumway.*

Honesty first, then courage, then brains.—*T. Roosevelt.*

Chronic fatigue is another expression for nerve exhaustion.

Prevention is better than cure and far cheaper.—*John Locke.*

“Many a man has a kick coming that has not reached him yet.”

Do you know that your cold is not only dangerous but contagious?

Most of the beef extracts on the market are of little value as nutrients.

Monotony is the most common cause for nags and worry. Remove the cause.

The removal of adenoids of a “dull” child will close the mouth and open the mind.

Boost for the Milligan bill, which provides for a state sanatorium for pulmonary tuberculosis.

“It is better to be sure than sorry,” therefore the public is entitled to the benefit of the doubt in diagnosis of contagious disease.

VITAL STATISTICS

Reported to the Kansas Board of Health for January, 1911.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
The State... totals, January, 1910.....	258 233	55 60	46 122	10 20	92 182	6 23	579 291	19 20	160 441	0 0	787 577	5 4
Allen	1	1	0	0	1	0	1	0	1	0	0	0
Anderson	0	0	0	0	0	0	1	0	1	0	50	0
Atchison	0	0	0	0	0	0	0	0	0	0	0	0
Barber	0	0	1	0	0	0	1	0	0	0	0	0
Barton	1	1	0	0	0	0	81	2	0	0	0	0
Bourbon	0	0	0	0	0	0	0	0	0	0	3	0
Brown	0	0	1	0	0	0	7	0	8	0	4	0
Butler	2	2	1	0	1	0	7	0	1	0	6	0
Chase	2	1	0	0	0	0	0	0	0	0	0	0
*Chautauqua.....												
Cherokee.....	4	3	0	0	4	1	0	4	5	0	0	0
*Cheyenne.....												
Clark	0	0	0	0	0	0	1	0	0	0	0	0
Clay	0	0	0	0	0	0	2	0	6	0	0	0
*Cloud.....												
Coffey	0	0	0	0	0	0	1	1	0	0	7	0
*Comanche.....												
Cowley	0	0	0	0	0	0	5	2	0	0	3	0
Crawford	3	3	0	0	4	2	0	0	0	0	1	1
Decatur	0	0	0	0	0	0	0	0	0	0	0	0
Dickinson.....	0	0	0	0	1	0	4	0	7	0	0	0
Doniphan	1	0	1	0	2	0	3	0	1	0	1	0
Douglas.....	3	3	1	1	1	0	15	1	1	0	12	0
*Edwards.....												
Elk	1	1	0	0	3	0	3	0	0	0	3	0
Ellis	0	0	0	0	0	0	0	0	0	0	0	0
Ellsworth.....	0	0	1	0	0	0	4	0	0	0	0	0
Finney	1	1	0	0	0	0	0	0	0	0	175	1
Ford	1	1	0	0	0	0	18	0	0	0	0	0
Franklin	1	1	0	0	2	0	1	0	0	0	0	0
Geary	2	1	0	0	0	0	0	0	0	0	3	0
Gove	0	0	0	0	0	0	1	0	0	0	3	0
Graham.....	0	0	0	0	0	0	0	0	0	0	30	0
*Grant.....												
*Gray.....												
Greeley	0	0	0	0	0	0	5	0	0	0	1	0
Greenwood.....	0	0	0	0	0	0	7	0	0	0	35	0
Hamilton	0	0	0	0	0	0	0	0	0	0	0	0
Harper	1	0	0	0	10	0	32	0	5	0	3	0
Harvey	0	0	0	0	0	0	13	0	0	0	0	0
Haskell	0	0	0	0	0	0	0	0	0	0	0	0
Hodgeman.....	2	2	0	0	0	0	0	0	0	0	0	0
Jackson.....	1	1	0	0	3	0	10	0	0	0	0	0
Jefferson.....	1	1	1	1	0	0	20	0	0	0	40	1
Jewell	0	0	0	0	0	0	0	17	0	0	0	0
Johnson.....	0	0	0	0	0	0	13	0	0	0	0	0
Kearny	0	0	1	0	0	0	0	5	0	0	24	0
Kingman	0	0	0	0	2	0	0	0	0	0	0	0
Kiowa	0	0	0	0	0	0	0	0	0	0	0	0
Labette	1	1	0	0	0	0	0	0	0	0	4	0
Lane	0	0	0	0	0	0	4	0	0	0	0	0
Leavenworth.....	1	1	0	0	3	0	7	0	2	0	105	0
Lincoln	1	1	0	0	0	0	0	0	0	0	0	0
Linn	0	0	1	0	0	0	0	0	0	0	0	0
*Logan.....												
Lyon	0	0	0	0	1	0	2	0	1	0	36	2
Marion	1	0	0	0	0	0	1	0	2	0	1	0
Marshall.....	3	3	1	0	0	0	15	0	34	0	1	0
McPherson.....	1	1	1	1	2	0	5	0	0	0	2	0

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
Meade.....	0	0	4	0	0	0	27	1	0	0	1	0
Miami.....	1	0	2	0	0	0	2	0	0	0	21	0
* Mitchell.....												
Montgomery.....	1	0	1	2	3	0	5	0	0	0	2	0
* Morris.....												
Morton.....	1	0	0	0	1	0	0	0	8	0	0	0
Nemaha.....	0	0	0	0	3	1	0	0	0	0	0	0
Neosho.....	2	1	0	0	0	0	1	0	0	0	0	0
Ness.....	0	0	0	0	0	0	0	0	0	0	11	0
Norton.....	0	0	0	0	0	0	0	0	1	1	1	1
Osage.....	10	3	0	0	1	0	26	0	0	0	1	1
Osborne.....	0	0	1	0	3	1	2	0	0	0	0	0
Ottawa.....	1	1	0	0	0	0	1	0	0	0	0	0
Pawnee.....	0	0	0	0	0	0	1	0	0	0	0	0
* Phillips.....												
Pottawatomie.....	0	0	0	0	0	0	16	2	9	0	20	0
Pratt.....	0	0	4	1	1	1	8	0	0	0	0	0
Rawlins.....	0	0	0	0	0	0	5	0	0	0	0	0
Reno.....	1	0	0	0	1	0	65	3	0	0	0	0
Republic.....	1	1	1	0	0	0	6	0	0	0	6	0
Rice.....	0	0	0	0	0	0	4	0	0	0	0	0
Riley.....	1	0	0	0	0	0	4	1	8	0	1	0
Rooks.....	0	0	0	0	0	0	2	0	0	0	0	0
Rush.....	0	0	0	0	0	0	0	0	0	0	12	0
Russell.....	0	0	0	0	0	0	6	0	1	0	0	0
Saline.....	1	1	0	0	0	0	2	0	10	0	30	0
Scott.....	0	0	0	0	0	0	0	0	0	0	0	0
Sedgwick.....	0	0	0	0	3	0	8	0	0	0	0	0
Seward.....	1	0	0	0	0	0	0	0	0	0	0	0
Shawnee.....	2	0	0	0	1	0	0	0	2	0	3	0
Sheridan.....	0	0	0	0	0	0	0	0	0	0	0	0
Sherman.....	0	0	1	1	0	0	0	0	0	0	0	0
Smith.....	0	0	0	0	3	0	4	0	0	0	0	0
Stafford.....	1	1	0	0	1	0	21	1	0	0	7	1
* Stanton.....												
Stevens.....	0	0	0	0	0	0	0	0	0	0	0	0
* Sumner.....												
Thomas.....	0	0	0	0	0	0	0	0	0	0	1	0
Trego.....	0	0	0	0	0	0	3	0	0	0	0	0
* Wabaunsee.....												
* Wallace.....												
Washington.....	2	0	1	1	0	0	1	0	4	0	0	0
Wichita.....												
Wilson.....	1	1	1	1	0	0	0	0	0	0	12	0
Woodson.....	0	0	0	0	0	0	3	0	0	0	0	0
Wyandotte.....	0	0	0	0	0	0	0	0	6	0	0	0
Cities:												
Fort Scott.....	1	1	0	0	3	0	0	0	0	0	2	0
Atchison.....	0	0	1	0	1	0	9	0	0	0	0	0
Coffeyville.....	3	3	0	0	0	0	0	0	1	0	0	0
Kansas City.....	4	0	16	0	9	0	26	0	11	0	10	0
* Leavenworth.....												
* Parsons.....	2	2	1	1	0	0	13	0	0	0	2	0
* Pittsburg.....												
Topeka.....	3	3	0	0	3	0	17	0	1	0	5	0
Wichita.....	4	4	1	0	5	0	16	1	1	0	4	1
State Institutions.....	178	3	0	0	0	0	0	0	0	0	0	0

* No reports.

Ohio and Colorado are buying and selling all groceries by weight, and the dealers and consumers like it.

The short-weight dealer is an enemy to society, and should be classed with and treated like the burglar and highwayman.

FOOD ECONOMY.

The study of food economy and the problem of nutrition is one of great importance, which has been especially emphasized the past few years by the uniformly increased cost of food products.

Naturally, the chemical substances of which the body is composed are, in a general way, similar to the food substances which are used to nourish it, the most important of which are protein, carbohydrates, fats, mineral matter and water.

Protein includes the nitrogenous compounds, such as lean meat, the white of eggs, the gluten of wheat, and the casein of milk. It forms about 18 per cent by weight of the body of the average man. The proteids are the most important constituents of our food, and are the basis of muscle, bone and other important tissues so essential to the body structure.

The carbohydrates include such compounds as starch, sugar, and the fiber of plants and vegetables. They are found in the cereal grains, potatoes and vegetables. The carbohydrates form but a very small part of the body tissues, being less than one per cent. They are very important, however, as articles of food, because they furnish the chief source of heat and energy.

The mineral matters yield little or no heat or energy, yet are quite necessary in the performance of the body functions. They form about 5 per cent of the body weight of an average man, and are found in the bones, teeth, tissues and body fluids.

Water forms over 60 per cent of the body weight, entering into the composition of all parts and structures of the body; it is therefore a most important constituent of our food, although of itself yields no heat or energy.

Fats form about 15 per cent by weight of the average man; fats are found in meats, fish, butter, nuts and certain vegetables, such as olives, and cereals, such as oatmeal and corn meal.

When more food is taken than is utilized by the body, it is stored as body fat, and is found in masses under the skin and in smaller amounts in various tissues of the body; thus the fat in food, unused protein, and starches and sugars are converted into fat and stored as such until such time as the body demands take it up and use it for heat and energy.

Most food contains more or less material that is not edible and which have little or no nutritive value, such as the bones of meat and fish, the skin and seeds of fruit and the shell of eggs; these are

called refuse in discussing the economy of foods, and bear an important relation to the cost of foods.

The purpose and necessity for food are two: First, as tissue builder and to repair the body waste; second, to make heat to keep the body warm, and for energy or power to do the work of the body.

All the organs and tissues of the body are built from nutritive ingredients so selected as to form food as is needed to supply that particular organ or tissue; just how this selection is made is not known. Just why and how the muscles select certain nutritive ingredients, the bones others, and this and that organ each their own particular ingredients from the food supply, for their nourishment and functions, is one of the most marvelous phenomena of nature.

Food undergoes great chemical changes in the processes of digestion and utilization, after which it is finally converted largely into carbon dioxide and the nitrogenous and other excretory products of urine, feces and perspiration. It is through these processes that the body derives its power for muscular work and the production of heat.

Heat and muscular power are forms of force and energy, and as food is consumed in the body its latent power is developed. This process requires the presence of oxygen just as the combustion of coal requires oxygen. When the fuel or food becomes oxidized, its latent or potential energy is transformed into heat and power, and thus there is a constant demand by the body for fuel, in order that the body may perform its constant work.

The amount of heat given off in the oxidization of a given quantity of food is called its "heat of combustion," and is the measure of its potential energy. The unit is known as the calorie, the amount of heat which would raise the temperature of one pound of water 4° F. Thus we measure the nutritive value of foods by the calorie or its "heat of combustion."

In a general way, it has been estimated that the protein used in ordinary diet has a fuel value of 1820 calories per pound, fats a fuel value of 4040 calories per pound, and carbohydrates a fuel value of 1820 calories per pound. It is found, therefore, that the fuel value of a pound of protein, of lean meat or albumen of egg, has approximately the same value as a pound of starch or sugar, and a pound of fat or butter a little over twice the value of either of the others. Fat being the most concentrated form of body fuel, shows the economy of nature in storing fat in the body to be used as food when the body demands it.

Professor Atwater has summarized the nutritive ingredients of food and their uses in the body by the following chart :

Nutritive ingredients (or nutrients) of food:

Food as purchased contains..	Edible portion..... <i>s. g.</i> , flesh of meat, yolk and white of eggs, wheat, flour, etc.	Water.	Nutrients..... Protein. Fats. Carbohydrates. Mineral matters.
	Refuse: <i>s. g.</i> , bones, entrails, shells, bran, etc.		

Uses of nutrients in the body:

Protein..... <i>s. g.</i> , white (albumen) of eggs, curd (casein) of milk, lean meat, gluten of wheat, etc.	Forms tissue.....	All serve as fuel energy in the forms of heat and muscular power.
Fats..... <i>s. g.</i> , fat of meat, butter, olive oil, oils of corn and wheat, etc.	Are stored as fat.....	
Carbohydrates..... <i>s. g.</i> , sugar, starch, etc.	Are transformed into fat.....	
Mineral matters (ash)..... <i>s. g.</i> , phosphates of lime, ash, soda, etc.	Share in forming bone, assist in digestion, etc.	

Professor Atwater then presents the following definitions of food: First, food is that which, taken into the body, builds tissues or yields energy; second, the most healthful food is that which is best fitted to the needs of the user; third, the cheapest food is that which furnishes the largest amount of nutriment at the least cost; and fourth, the best food is that which is both healthful and cheapest.

It is self-evident that the value of food for nutriment depends upon its digestibility and composition; these are determined by experimentation and by chemical analysis.

The composition of some of the principal foods is set forth in the following tables, which have been worked out by the United States Department of Agriculture.

As indicated, the foods tabulated (on pp. 39, 40) represent the foods as ordinarily purchased, which include the waste; therefore, the study of the fuel value per pound must take into account the waste, or serious error will be made as to the relative values of the edible portions of various foods. Thus, the refuse of black walnuts is 74.1 per cent, while that from English walnuts is 58.1 per cent, which accounts for the wide variation between the fuel value of a pound each of these nuts as purchased in their shells. Thus, also, the animal foods contain large amounts of refuse, as bones and skin, and fruits, in the rind and seeds, whereas the dairy products and cereals have little or no refuse, and their fuel value per pound, as ordinarily purchased on the market, are correspondingly greater.

FOOD MATERIAL AS PURCHASED.

ANIMAL FOOD.	Refuse.	Water.	Protein.	Fats.	Carbohy- drates.	Ash.	Fuel value per pound.
							<i>Calories.</i>
BEEF (fresh).							
Sirloin steak.....	12.8%	54.0%	16.5%	16.1%	.....	.9%	975
Ribs.....	20.8	42.8	13.9	21.2	.....	.7	1,185
Round.....	7.2	60.7	19.0	12.3	.....	.1	890
VEAL.							
Fore quarter.....	24.5	54.2	15.1	6.0	.....	.7	535
Hind quarter.....	20.7	56.2	16.2	6.6	.....	.8	580
MUTTON.							
Loin chops.....	16.0	43.0	13.5	28.3	.....	.7	1,415
PORK (fresh).							
Ham.....	10.7	43.0	13.5	25.9	.....	.8	1,320
Loin chops.....	19.7	41.8	13.4	24.2	.....	.8	1,245
PORK (cured).							
Ham.....	13.6	34.8	14.2	33.4	.....	4.2	1,685
Bacon.....	7.7	17.4	9.1	62.2	.....	4.1	2,715
POULTRY.							
Chicken, broilers.....	41.6	43.7	12.8	1.4	.....	.7	305
Fowls.....	25.9	47.1	13.7	12.3	.....	.7	765
Turkey.....	22.7	42.4	16.1	18.4	.....	.8	1,060

ANIMAL FOOD.	Refuse.	Water.	Protein.	Fats.	Carbo- hydrates.	Ash.	Fuel value per pound.
							<i>Calories.</i>
FISH.							
Cod, dressed.....	29.9%	53.5%	11.1%	.2%	.....	.8%	220
Halibut, steaks.....	17.7	61.9	15.3	4.4	.....	.9	475
FISH (canned).							
Salmon.....	.....	63.5	21.3	12.1	.....	2.6	915
Sardines.....	.....	53.6	23.7	12.1	.....	5.3	950
SHELL FISH.							
Oysters, solids.....	.....	33.3	6.0	1.3	3.3%	1.1	225
Crabs.....	52.4	36.7	7.9	.9	.6	1.5	200
EGGS.							
Hens' eggs.....	11.2	65.5	13.1	9.3	.....	.9	635
DAIRY PRODUCTS.							
Butter.....	.....	11.0	1.0	35.0	.....	3.0	3410
Whole milk.....	.....	37.0	3.3	4.0	5.0	.7	310
Cheese, full cream.....	.....	34.2	23.9	33.7	2.4	3.3	1335
VEGETABLE FOODS. (Flour, meal, etc.)							
Graham flour.....	.....	11.3	13.3	2.2	71.4	1.3	1645
Wheat flour, patent.....	.....	12.0	11.4	1.0	75.1	.5	1635
Buckwheat flour.....	.....	13.6	6.4	1.2	77.9	.9	1605
Corn meal.....	.....	12.5	9.2	1.9	75.4	1.0	1635
Oat breakfast food.....	.....	7.7	13.7	7.3	66.2	2.1	1300
Rice.....	.....	12.3	8.0	.8	79.0	.4	1620
BREAD, PASTRY, ETC.							
White bread.....	.....	35.3	9.2	1.3	53.1	1.1	1200
Brown bread.....	.....	43.6	5.4	1.3	47.1	2.1	1040
Graham bread.....	.....	35.7	8.9	1.3	52.1	1.5	1195

VEGETABLE FOOD.	Refuse.	Water.	Protein.	Fats.	Carbo- hydrates.	Ash.	Fuel value per pound.
							<i>Calories.</i>
Rye bread.....		35.7%	9.0%	.6%	53.2%	1.5%	1170
Cake.....		19.9	6.3	9.0	63.3	1.5	1680
Soda crackers.....		5.9	9.8	9.1	73.1	2.1	1875
SUGARS, ETC.							
Molasses.....					70.0		1225
Candy, plain.....					96.0		1690
Honey.....					81.0		1430
Sugar, granulated.....					100.0		1750
Beans, dried.....		12.6	22.5	1.8	59.6	3.5	1520
Beans, string.....	7.0%	83.0	2.1	.8	6.9	.7	170
Cabbage.....	15.0	77.7	1.4	.2	4.8	.9	115
Celery.....	20.0	75.6	.9	.1	2.6	.8	65
Corn, green, sweet.....		75.4	3.1	1.1	19.7	.7	440
Cucumbers.....	15.0	81.1	.7	.2	2.6	.4	65
Lettuce.....	15.0	80.5	1.0	.2	2.5	.8	65
Onions.....	10.0	73.9	1.4	.3	3.9	.5	130
Peas, shelled.....		74.6	7.0	.5	16.9	1.0	440
Potatoes.....	20.0	62.6	1.8	.1	14.7	.8	295
Sweet potatoes.....	20.0	55.2	1.4	.6	21.9	.9	440
Squash.....	50.0	44.2	.7	.2	4.5	.4	100
Tomatoes.....		94.3	.9	.4	3.9	.5	100
Turnips.....	30.0	62.7	.9	.1	5.7	.6	120
VEGETABLES (canned).							
Baked beans.....		63.9	6.9	2.5	19.6	2.1	555
Peas.....		35.3	3.6	.2	9.3	1.1	235
Succotash.....		75.9	3.6	1.0	18.6	.9	425

VEGETABLE FOOD.	Refuse.	Water.	Protein.	Fats.	Carbo- hydrates.	Ash.	Fuel value per pound.
							<i>Calories.</i>
FRUITS, BERRIES, ETC.							
(fresh).							
Apples.....	25.0%	63.3%	0.3%	0.3%	10.8%	.3%	190
Bananas.....	35.0	43.9	.8	.4	14.3	.6	260
Grapes.....	25.0	58.0	1.0	1.2	14.4	.4	295
Oranges.....	27.0	93.4	.6	.1	3.5	.4	150
Pears.....	10.0	76.0	.5	.4	12.7	.4	230
Raspberries.....		85.3	1.0		12.6	.6	230
Strawberries.....	5.0	85.9	.9	.6	7.0	.6	150
Watermelons.....	59.4	37.5	.2	.1	2.7	.1	50
Dates (dried).....	18.0	13.3	1.9	2.5	70.6	1.2	1275
Dates (dried).....		18.3	4.3	.3	74.2	2.4	1290
Raisins.....	10.0	13.1	2.3	3.0	63.5	3.1	1265
NUTS.							
Almonds.....	45.0	2.7	11.5	30.2	9.5	1.1	1515
Cocoanuts.....	43.8	7.2	2.9	25.9	14.3	.9	1295
Filberts.....	52.1	1.8	7.5	31.3	6.2	1.1	1430
Hickory nuts.....	62.2	1.4	5.3	25.5	4.3	.8	1145
Pecans.....	53.2	1.4	5.2	33.3	6.2	.7	1465
Peanuts.....	24.5	6.9	19.5	29.1	18.5	1.5	1775
Black walnuts.....	74.1	.6	7.2	14.6	3.0	.5	730
Walnuts (English).....	53.1	1.0	6.9	26.6	6.3	.6	1260

It is seen, then, that meats, fish, milk, eggs, fresh vegetables and fruits contain the most water and refuse; that protein is most abundant in the animal foods and legumes, and in considerable quantities in certain cereals; that carbohydrates are the chief constituents of the vegetable products, and are found in considerable amount in milk; that fats are found in greatest quantities in animal foods and nuts, and that small amounts of mineral matter are

found in all foods. The fuel value varies, therefore, within wide limits, being greatest in those materials which contain the most fat and the least water and refuse. It must be borne in mind, however, that the *real* nutritive value of a food depends upon the amount of nutritive ingredients that can be made available to the body by digestion and assimilation. As has been so well said, "We live not upon what we eat, but upon what we digest."

It has been found that in the food of an ordinary mixed diet about 92 per cent of the protein, 95 per cent of the fats, and about 97 per cent of the carbohydrates are utilized by the body. Animal foods are usually more digestible than the vegetable, especially the protein they contain. It is assumed, of course, that the above statements are conditioned upon a proper preparation of the foods, for a most nutritious, wholesome food may be rendered difficult of digestion and its nutritive value greatly impaired by improper cooking or preparation.

Price is not a true index of the real quality or fuel value of food. A glass of pure milk, a slice of buttered bread, an egg and a dish of apple sauce, all costing twenty or twenty-five cents, is a far better meal for the average person than a planked sirloin beef steak costing \$1.50. In like manner a simple meal of bread and milk, with some kind of fruit sauce, may be more wholesome for a growing child than an elaborate and expensive dinner at a hotel. It is well to remember that the "high cost of living" has not yet removed the possibility of a wholesome and generous diet from even the poorest paid laborer.

Professor Atwater lays down two general rules to be observed in the regulation of the diet: First, to choose those things which "agree" with them, avoiding those things that cannot be assimilated without harm; and second, to use such kinds and amounts of food as will supply all the nutrients the body needs, taking care that the digestive functions are not overburdened with superfluous material to be disposed of at the cost of health and strength. He declares that in our actual practice of eating we are apt to be too much influenced by taste, and are prone to let natural instinct be overruled by acquired appetite, to the neglect of the teachings of experience.

Commenting on the controversy raised by faddists who contend that two meals a day is the most healthful way to live, Professor Atwater submits the following:

"If the same amount of food is to be eaten, it is hard to see the advantage of two very hearty meals over three ordinary ones. The

best physiological evidence implies that moderate quantities of food, taken at moderate intervals, are more easily and completely digested by ordinary people than large quantities taken at long intervals. If the food ordinarily taken is considered excessive, and the aim is simply to reduce the amount, it would seem more rational to make all the meals lighter than to leave one out. The very fact that the custom of eating a number of meals a day has so long been almost universal, indicates that it must have some advantages which instinct, based upon experience, approves and justifies."

The chief item in the cost of living of a large majority of people is the cost of food. Unfortunately it is almost universally true that few people, even those who wish to economize, know very little as to the combinations of food which are best fitted for themselves as nourishment, and have little or no information as to the relation between the nutritive value of foods and their cost. One must not only be advised as to the cost per pound of the different food products, but also the amounts and kinds of nutritive ingredients they contain. In a general way it may be said that, "the cheapest food is that which supplies the most nutriment for the least money, and the most economical food is that which is cheapest and at the same time best adapted to the needs of the user."

The following table is here given, estimating the economic value of foods, which shows the amounts of each in pounds and the fuel value of the same, expressed in calories, that can be purchased for ten cents. These values are based on prices current in Topeka on June 20, 1910.

These figures represent only the cost of the food as purchased in the market; no account is taken of the cost of preparation or cooking, which in some instances is of more importance from the standpoint of economy than the original cost of the product.

A study of the table will show that the market price of food is not regulated or conditioned upon its nutritive value. A pound of protein or fat from a tenderloin or sirloin of beef is no more nutritious than the same amount from the shoulder or round, yet it costs much more; the agreeableness of food to the palate, the current supply and demand, and other factors regulate the price rather than its fuel value.

The current supply and demand of meats, dairy products, and certain fruits and vegetables has been so regulated of late years, through the extensive system of cold storage, that artificial conditions have been so created as to be, perhaps, the most important

FOOD ECONOMY

WHAT TEN CENTS WILL BUY

AMOUNTS OF ACTUALLY NUTRITIVE INGREDIENTS OBTAINED IN DIFFERENT FOOD MATERIALS FOR TEN CENTS

(AMOUNTS OF NUTRIENTS IN POUNDS; FUEL VALUE IN CALORIES)

FOOD MATERIALS	PRICE PER POUND		TEN CENTS WILL BUY	POUNDS OF NUTRIENTS & CALORIES OF FUEL VALUE IN TEN CENTS WORTH		
	CTS.	LBS.		1 LB. 2000 CAL.	2 LBS. 4000 CAL.	3 LBS. 6000 CAL.
BEEF, ROUND	18	.56				
BEEF, SIRLOIN	22	.45				
BEEF, SHOULDER	12.5	.8				
MUTTON, LEG	18	.56				
PORK, SALT	16	.63				
HAM, SMOKE	21	.47				
FISH, FRESH	15	.67				
CODFISH	20	.5				
MILK 8 CTS. QT.	4	2.5				
BUTTER	30	.33				
CHEESE	25	.4				
EGGS 20 CTS. DZ.	13	.77				
WHEAT BREAD	5	2.				
WHEAT FLOUR	3	3.33				
CORN MEAL	3	3.				
OAT MEAL	5	2.				
BEANS, NAVY	6.25	1.6				
RICE	5	2.				
POTATOES	2.08	4.8				
SUGAR	5.55	1.71				

IT IS ESTIMATED THAT A MAN AT MODERATE MUSCULAR WORK REQUIRES ABOUT 0.23 POUNDS OF PROTEIN AND 3,050 CALORIES OF ENERGY PER DAY.

CALCULATIONS ARE BASED ON PRICES CURRENT IN TOPEKA JUNE 20, 1910.

factor in the "high cost of living," which is so generally prevalent in this country to-day.

According to a statement in the Pennsylvania Bulletin, there is now being held in cold storage:

Fourteen million cattle.

Six million calves.

Twenty-five million sheep and lambs.

Fifty million hogs.

This number is enough for one entire animal for each adult in the United States, with enough whole animals left over to give two to each family.

This meat is being held by the big packing houses in 558 cold-storage plants. In addition, it is said that in seventy-eight fish-freezing plants in the United States there are fish waiting to be doled out that are valued at \$25,000,000.

In other cold-storage plants during any year now, according to the storage man's own statistics, there are:

One billion eight hundred million eggs.

One hundred and thirty million pounds of butter.

Fruit valued at \$50,000,000.

Then, besides, there are millions of pounds of potatoes and onions, thousands of turtles, eels, cases of canned goods, milk, butter and cheese, valued at \$100,000,000.

The total value of meat and other food stuffs placed in cold storage during a year at present is, according to the figures of the cold-storage concerns, close to three billion dollars. These cattle and other food supplies have been bought when prices were low and stored to force up prices. With 85,000,000 whole animals and 1,800,000,000 eggs, etc., held indefinitely, it is no wonder there is a shortage in supply and consequently high prices. It is the old law of supply and demand; only in this case the supply is short not from lack of production, but from combination which enables the middleman to hold a portion of the supply from market and so create an artificial shortage.

If the figures given above are correct, and they appear to come from a reliable source, it is evident that law was needed to prevent the holding of food supplies in cold storage longer than a "reasonable time." Such laws, if enforced, would equalize the supply to the demand, and at the same time would prevent the creation of an artificial shortage.

The statements so often made by the advertisements of breakfast foods, that their particular product has a special nutritive

value not found in the grain or cereal from which it is made, is on its face entirely false. The retail price of these products is from two to five times the price of flour or meal made from the same grains. From a standpoint of economy, therefore, these products have no legitimate ground for existence.

The old saying that "the best is the cheapest" is not true of food, although it may apply to many articles of commerce such as fabrics, clothing, etc. The plain, substantial food products, such as the cheaper cuts of meat and fish, flour, milk, corn meal, oatmeal, beans and potatoes, are as digestible and nutritious as are any of the costlier materials and much better suited to the income of the average American citizen.

The Bulletin of the Maine Agricultural Experiment Station for 1906 quotes the cost in cents per pound of some of these cereal foods: Quaker Oats, 3.1 cents; Cream of Wheat, 8.8; Grape Nuts, 14.6; Shredded Whole Wheat, 15; Force, 16.5; Flaked Rice, 18.2; Granula, 27.2; and Prof. E. H. S. Bailey, food analyst for the State Board of Health, in an article in December Popular Science Monthly, adds the following: Quaker Corn Flakes, 13.3 cents per package; Kellogg's Corn Flakes, 13.3; Maple Corn Flakes, 14.5; Post Toasties, 14.5; Grape Sugar Flakes, 17.8; Malta Vita, 18.4; Sugar Corn Flakes, 20; Holland Rusk, 22.8, and Puffed Wheat, 29.1. Professor Bailey then comments as follows: "At this rate a bushel of wheat, which might be originally worth one dollar, would when made into a breakfast food cost the housekeeper from five to twelve dollars, calculating that 75 per cent of the grain is available as food, as is the case in making wheat flour. Oatmeal in bulk sells at five cents a pound, and simple preparations of other grains at from five to seven cents.

"These are a few of the illustrations to show 'where the money goes,' or at least some of it, expended in the ordinary household. Some of us are living on the luxuries of the market, and use them as food to furnish the proteids and carbohydrates and fat for daily consumption. Instead of using the oak and maple and pine for fuel, we are feeding the fire with mahogany and Circassian walnut and rare imported woods."

Using the usual mortality rate for diphtheria treated with and without diphtheria antitoxin, we believe that the free distribution of antitoxin by the State Board of Health has saved 102 lives the past year? Worth while, isn't it?

The Stomach.

Did you ever have "stomach trouble"? If you have not you have escaped one of life's most disciplinary blessings, for nothing so humbles one's pride, nothing so dissipates one's egotism, nothing so doubles one up as it were, as a genuine and vigorous case of "stomach trouble."

The stomach is a large gunny-sack like muscular pouch situated in the northern part of the abdomen, at a convenient location to catch all the sundry material of food and drink, including ices, pickles, pies, bologna and booze, and other junk consigned to it by the owner thereof.

The function of the stomach serves for many purposes, chief among which is that of a warehouse, junk-shop, groggery, and ice-box, although some of the highbrows would have you believe that it is supposed to be a place to digest nitrogenous foods, et cetera.

The stomach is the most patient and long-suffering of any of the organs of the body, for it seems to stand for most any kind of treatment for a number of years before its patience becomes exhausted; you may burn it with mustards, chili con carne, or hot tamalies, you may scald it with hot soups and hot drinks, you may blister it with peppers, sauces and raw liquors, you may freeze it with ice-cream, ice-drinks and ices, you may soak it with gallons of cure-all mineral-spring waters, or mistreat it by withholding anything but "nature's raw foods," you may souse it with patent medicines, or stuff it to standing room only with a cheap restaurant bill of fare, yet it will uncomplainingly do its best until — until — alas! and alack! one day the worm will turn, one day its long-suffering patience will be converted into a long-suffering agony, and you will then begin to debate in your mind the negative side of that old, old question, "Is life worth living?"

If we could realize early enough in life that the purpose and function of the stomach is to digest a reasonable amount of properly prepared food in order that the body may be nourished, and could be made to understand that a high state of resistance to disease is only possible by having a properly nourished body, we might be deterred from misusing it as we do; but it seems that the experience of others counts for little, and each must go through his own life experience before he realizes that the stomach should be entitled to respect and kind treatment if it is to best serve its purpose, that of the chief nutritional manufacturing center-of the body.

Board of Health Notes.

Use the diphtheria antitoxin early and plenty of it.

One touch of the rheumatism sets the whole world "achin'."

A man should change his opinions as he does his shirt—when-
ever there is a cleaner one to be had.

It is said there is close to two and a half billion dollars' worth of
food products and fruits of various kinds held in cold storage in
this country.

The argument that the adulteration of food is in the interest of
the poor man, in order that he may have a cheaper food, is an in-
sult to both his intelligence and his stomach.

The result of a large number of physiological tests of Tr. Aconite
on the market discloses the fact that but few are up to the standard
in strength and are as variable as March weather.

The preparation known as Dentinal, which has been used by
dentists for the treatment of Rigg's disease, seems to be a prepara-
tion of cresol dissolved in the lighter distillates ether and alcohol.

The Topeka Incinerating Plant is one of the chief assets of the
city. Now for an ordinance compelling the removal of manure
piles, and for fly-proof privy vaults; then the capital city should be
practically "flyless," and incidentally typhoid fever and other
diarrhoeal diseases greatly diminished or obliterated.

Chicago Pasteur Institute for the prevention of hydrophobia
has treated since its inauguration 4158 patients, of whom only
eight have died, a mortality of 1.9 per 1000. Of the cases reported,
the large majority were bitten by rabid dogs; other sources of in-
oculation being, in the order of their importance: cats, horses,
cows, human beings, skunks, calves, squirrels, pigs, mules, coyotes,
wolves, burros, sheep, rat and monkey.

Common sense is not sufficient to teach the individual the or-
dinary precautions for avoiding colds with their sequels—la grippe,
pneumonia, and pleurisy. It requires education as well as common
sense. The education should begin in the family, continue in the
public school, and never end. The simple laws of sanitation and
of cleanliness and the avoidance of epidemic and contagious dis-
eases should be made a part of the education of every child in this
country.—*Dr. H. W. Wiley.*

A PRAYER FOR DOCTORS AND NURSES.

By WALTER RAUSCHENBUCHE.

We praise Thee, O God, for our friends, the doctors and nurses, who seek the healing of our bodies. We bless Thee for their gentleness and patience, for their knowledge and skill. We remember the hours of our suffering when they brought relief, and the days of our fear and anguish at the bedside of our dear ones, when they came as ministers of Thee. May we reward their fidelity and devotion by our loving gratitude, and do Thou uphold them by the satisfaction of work well done.

We rejoice in the tireless daring with which some are now tracking the great slayers of mankind by the white light of science. Grant that under their teachings we may grapple with the sins which have ever dealt death to the race, and that we may so order the life of our communities that none may be doomed to an untimely death for lack of the simple gifts which Thou hast given in abundance. Make thou our doctors the prophets and soldiers of Thy kingdom, which is the reign of cleanliness and self-restraint and the dominion of health and joyous life.

In their whole profession strengthen the consciousness that their calling is holy and that they too are disciples of the saving Christ. May they never through the pressure of need or ambition surrender the sense of a divine mission and become hirelings who serve only for money. Make them doubly faithful in the service of the poor who need their help most sorely, and may the children of the workingman be as precious to them as the children of the rich. Though they deal with the frail body of man, may they have an abiding sense of the eternal value of the life residing in it, that by the call of faith and hope they may summon to their aid the powers of Thy all-pervading life.

—*American, November 10.*

BULLETIN
OF THE
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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DRACON, Statistician.

No. 3.

MARCH, 1911.

VOL. VII

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Have you cleaned the back yard?

Some people still continue to diagnose smallpox with their nose.

The Christian Scientists in the legislature opposed all medical legislation.

Antimeningitic serum can be secured from the University School of Medicine at Lawrence.

The "Milligan bill" providing for a state sanitarium for the treatment and cure of pulmonary tuberculosis is now a law.

"Hats off," to the Pennsylvania Department of Health upon the discovery of the micro-organism of acute epidemic poliomyelitis.

The legislature passed a good "standard registration of vital statistics" law, but failed to appropriate enough money to make it effective.

The public health is the foundation on which reposes the happiness of the people and the power of the country. The care of the public health is the first duty of a statesman.—*Lord Beaconsfield.*

The National Association for the Study and Prevention of Tuberculosis is authority for the statement that the sick of America annually spend \$15,000,000 for fake consumption cures. Oh, the pity of it!

VITAL STATISTICS

Reported to the Kansas Board of Health for February, 1911.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTY.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
The State, totals, February, 1910....	289 276	58 65	44 80	19 10	61 203	7 12	481 247	19 17	279 280	0 0	1542 1846	6 14
Allen	2	0	0	0	0	0	1	1	1	0	8	0
Anderson	0	0	0	0	0	0	0	0	0	0	0	0
Atchison	0	0	0	0	0	0	0	0	0	0	0	0
Barber	0	0	0	0	0	0	0	0	0	0	0	0
Barton	2	1	1	1	0	0	48	5	1	0	2	0
Bourbon	1	1	2	2	0	0	0	0	0	0	1	0
Brown	5	4	2	0	1	1	21	0	4	0	6	0
Butler	3	3	2	1	0	0	2	2	0	0	29	0
Chase	0	0	0	0	0	0	0	0	0	0	3	0
Chautauqua	0	0	0	0	0	0	0	0	0	0	0	0
Cherokee	1	1	1	1	2	0	0	0	50	0	1	1
Cheyenne	0	0	0	0	0	0	0	0	0	0	0	0
Clark	0	0	0	0	0	0	1	0	0	0	0	0
Clay	0	0	0	0	0	0	7	0	0	0	0	0
Cloak	0	0	0	0	0	0	0	0	22	0	1	0
Coffey	1	0	0	0	1	0	0	0	0	0	10	0
Comanche	1	0	0	0	0	0	0	0	0	0	4	0
Cowley	2	1	0	0	0	0	2	1	0	0	3	0
Crawford	2	2	1	1	1	1	0	0	2	0	0	0
Decatur	0	0	0	0	0	0	5	0	0	0	0	0
Dickinson	0	0	0	0	0	0	1	0	12	0	1	0
Douglas	1	1	0	0	0	0	0	0	1	0	0	0
Douglas	1	1	0	0	0	0	7	6	0	0	24	0
Douglas	0	0	0	0	0	0	4	0	0	0	15	0
Edwards	0	0	0	0	1	1	6	0	0	0	38	0
Ellis	0	0	0	0	0	0	0	0	0	0	100	0
Ellis	0	0	0	0	0	0	0	0	0	0	0	0
Ellsworth	2	1	0	0	0	0	2	0	0	0	0	0
Finney	1	1	0	0	0	0	0	0	0	0	50	1
Ford	0	0	0	0	0	0	11	1	0	0	0	0
Ford	2	2	0	0	1	0	0	0	0	0	0	0
Franklin	1	0	0	0	0	0	0	0	0	0	2	0
Geary	0	0	0	0	0	0	14	0	0	0	2	0
Gove	0	0	0	0	0	0	4	2	0	0	0	0
Graham	0	0	0	0	0	0	0	0	0	0	0	0
Grant	0	0	1	0	1	1	1	0	0	0	0	0
Gray	0	0	0	0	0	0	3	0	0	0	0	0
Greene	0	0	0	0	0	0	11	0	19	0	0	0
Greenwood	0	0	0	0	0	0	0	0	0	0	130	0
Hamilton	0	0	0	0	0	0	2	7	0	0	0	0
Harper	0	0	0	0	0	0	29	1	0	0	14	0
Harvey	0	0	0	0	0	0	0	0	0	0	0	0
Haskell	0	0	0	0	0	0	1	0	0	0	0	0
Hodgeman	0	0	0	0	0	0	1	0	6	0	0	0
Jackson	0	0	0	0	0	0	0	0	0	0	0	0
Jefferson	0	0	0	0	0	0	0	0	0	0	0	0
Jewell	0	0	1	1	0	0	4	0	20	0	2	0
Johnson	0	0	0	0	0	0	0	0	0	0	47	0
Kearny	0	0	0	0	1	0	0	0	1	0	0	0
Kingman	0	0	0	0	0	0	0	0	0	0	0	0
Kiowa	0	0	0	0	0	0	0	0	0	0	0	0
Labette	0	0	0	0	0	0	0	0	0	0	18	0
Lane	0	0	0	0	1	0	0	0	7	0	5	0
Leavenworth	0	0	0	0	0	0	1	1	0	0	0	0
Lincoln	0	0	2	2	0	0	0	0	0	0	15	0
Linn	0	0	0	0	0	0	0	0	0	0	0	0
Logan	0	0	0	0	1	0	4	0	0	0	36	0
Lyon	0	0	0	0	0	0	2	0	4	0	2	0
Marion	1	1	0	0	0	0	15	1	22	0	1	0
Marshall	0	0	0	0	0	0	5	0	4	0	0	0
McPherson	1	1	1	0	2	0	0	0	4	0	15	0

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..
Meade.....	0	0	0	0	0	0	10	0	0	0	8	0
Miami.....	1	0	1	0	0	0	2	0	1	0	58	0
Mitchell.....	0	0	0	0	0	0	7	0	0	0	0	0
Montgomery.....	2	2	0	0	2	0	0	0	11	0	0	0
Morris.....	1	1	3	0	5	0	3	0	0	0	23	0
Morton.....	1	1	0	0	0	0	0	0	4	0	0	0
Nemaha.....	0	0	0	0	0	0	2	0	7	0	0	0
Neosho.....	0	0	2	1	0	0	0	0	0	0	11	0
Ness.....	0	0	0	0	0	0	0	0	0	0	34	0
Norton.....	0	0	0	0	0	0	1	0	0	0	0	0
Osage.....	7	1	2	1	0	0	7	1	0	0	1	4
Osborne.....	1	0	1	0	2	0	8	0	0	0	4	0
Ottawa.....	0	0	0	0	0	0	0	0	17	0	0	0
Pawnee.....	3	0	0	0	0	0	8	0	0	0	1	0
Phillips.....	0	0	0	0	0	0	0	0	0	0	0	0
Pottawatomie.....	1	1	0	0	0	0	2	0	3	0	24	0
Pratt.....	0	0	3	1	1	1	6	1	0	0	30	0
Rawlins.....	0	0	0	0	0	0	1	0	0	0	0	0
Reno.....	0	0	0	0	1	0	33	0	0	0	2	2
Republic.....	1	1	0	0	0	0	0	0	0	0	13	0
Rice.....	0	0	0	0	0	0	0	0	0	0	0	0
Riley.....	3	3	1	0	2	0	16	0	0	0	0	0
Rooks.....	0	0	0	0	0	0	2	0	0	0	0	0
Rush.....	1	0	0	0	2	1	0	0	1	0	5	0
Russell.....	1	0	0	0	0	0	0	0	1	0	0	0
Saline.....	1	1	0	0	0	0	0	0	11	0	227	0
Scott.....	0	0	0	0	0	0	0	0	0	0	9	0
Sedgwick.....	5	2	1	1	3	0	28	1	2	0	51	0
Seward.....	0	0	0	0	0	0	4	0	0	0	0	0
Shawnee.....	1	1	1	0	1	0	0	0	0	0	0	0
Sheridan.....	0	0	0	0	0	0	0	0	0	0	1	0
Sherman.....	0	0	0	0	0	0	7	0	0	0	0	0
Smith.....	0	0	0	0	3	0	0	0	0	0	0	0
Stafford.....	2	2	0	0	0	0	3	0	0	0	6	0
*Stanton.....	0	0	0	0	0	0	0	0	0	0	0	0
Stevens.....	0	0	0	0	0	0	0	0	0	0	0	0
*Sumner.....	0	0	0	0	0	0	1	0	0	0	0	0
Thomas.....	0	0	0	0	0	0	4	0	0	0	0	0
Trego.....	0	0	0	0	0	0	0	0	0	0	0	0
*Wabaunsee.....	0	0	0	0	0	0	0	0	0	0	13	0
Wallace.....	0	0	0	0	0	0	2	0	1	0	0	0
Washington.....	0	0	0	0	0	0	0	0	0	0	0	0
Wichita.....	5	2	1	1	3	0	28	1	2	0	51	0
Wilson.....	0	0	0	0	1	0	1	0	1	0	50	0
Woodson.....	0	0	0	0	0	0	0	0	0	0	1	0
Wyandotte.....	0	0	0	0	0	0	2	0	0	0	0	0
Cities:												
Fort Scott.....	3	1	1	1	1	0	0	0	0	0	0	0
Atchison.....	0	0	0	0	0	0	0	0	0	0	0	0
Coffeyville.....	0	0	0	0	0	0	3	0	5	0	0	0
Kansas City.....	5	0	5	0	10	0	22	0	0	0	0	0
Leavenworth.....	3	3	1	1	2	0	4	0	2	0	204	1
Parsons.....	2	2	0	0	0	0	28	0	0	0	1	0
Pittsburg.....	1	1	0	0	1	0	6	0	1	0	1	0
Topeka.....	7	7	2	2	7	1	7	0	1	0	12	0
*Wichita.....	0	0	0	0	0	0	0	0	0	0	0	0
State Institutions.	151	0	0	0	0	0	0	0	0	0	0	0

* No reports.

The annual inspection of hotels is called for by health officers.

It is now unlawful to sell or offer for sale linseed oil or turpentine that is adulterated. The food and drug inspectors are charged with the enforcement of the law.

TESTS OF BREAD WRAPPING.

By C. A. A. Urr, Assistant in Food Analysis, Kansas State Board of Health.

In recent years very decided changes have been brought about in the preparation and handling of foods from the producer to the consumer. The new slogan is, "Sanitary food, prepared and handled in a sanitary way, brought to the consumer in a clean, sanitary condition." This demand for sanitary foodstuffs has been partly satisfied, at least, by the package goods, for now nearly everything we eat can be bought in a sanitary carton. Leaving out the argument that the advent of the carton has increased the cost of living, it is still true that the attractiveness, the cleanliness, of the package food, appeals to the average housewife. She buys her raisins and currants, her coffee and tea, her beans and rice, in packages because they look good to her.

The grocer wraps the things he sends out for delivery; the butcher wraps the things he sends out; the milkman bottles his milk; even the dry-goods and hardware people send out their commodities wrapped. In some instances this wrapping habit has extended to the baker, but in most places the old dirty bakery wagon, with its cargo of unwrapped bread going up the street in a cloud of dust or flying mud, is still a common sight.

Many bakers, realizing that there was more need for the sanitary handling of bread from the shop to the consumer, began wrapping it in waxed paper. For some time the thing was more or less experimental, since there were many conditions that influenced the keeping qualities of the bread. Some experimented with success, while others gave it up as a bad job.

The common complaints heard in regard to bread wrapping are these: It does n't keep so well; it gets moldy; it soon sours; the moisture becomes distributed unevenly in the loaf; it's all right for some kinds of bread, but not for all bread; it costs too much, etc.

In order that information might be obtained on some of these points, an experiment in bread wrapping was undertaken at the Kansas State Agricultural College in November, 1910. The paper used was obtained through the courtesy of the National Bread Wrapping Company, the Shawmut Waxed Paper Company, and the Hammerschlag Manufacturing Company.

The bread used was commercial baker's bread, baked by A. S. Wolfe, Manhattan, and taken from the regular stock. Data were

obtained on the following kinds of bread, wrapped and unwrapped: Baker's, baker's "Homemade," rye, graham, Vienna, French, cream and "Wolfe's Special." In all, eighty-four loaves were under observation, for periods of from 24 hours to 120 hours.

The general method of procedure was as follows: On Monday morning ten loaves of each of the different kinds of bread intended for the experimental work of that week were secured, and the time of baking noted. They were carried direct to the chemical laboratory, a mile and a half, and five loaves were wrapped warm—not hot—with one exception, which will be noted. In most cases the loaves were wrapped an hour after baking. Five loaves were left unwrapped for a check.

All the loaves were weighed each day, and two loaves, wrapped and unwrapped, were taken out of the experiment for moisture and acidity determinations. Physical observations were also made. Thus data were secured on the various kinds of bread for periods of from one to five days.

The following analytical methods were used:

Water.—The loaf was quartered, a hundred-gram quarter being taken for a sample, thus securing proper proportions of crumb and crust. This was cut into very thin pieces and piled criss-cross in a large evaporating dish. It was then dried in the steam oven, at the temperature of boiling water, to constant weight. The loss in weight was calculated as water.

Acidity.—A hundred-gram quarter was cut in small pieces, placed in an 850 cc. Erlenmeyer flask, and 700 cc. of freshly boiled chemically pure water were added. The flask was shaken every five minutes during a half-hour period. After settling, the liquid was poured on a filter, and 100 cc. of the clear filtrate were titrated against $\frac{N}{20}$ NaOH, using phenolphthalein as an indicator. The results are figured on a moisture-free basis.

The results with various kinds of bread will be considered in the order in which they were secured.

Ordinary bakers' bread.—Obtained November 7, 1910, taken from the oven at 7:55 A. M. and carried to the laboratory. Table I shows the data obtained on this bread. It will be noted that the unwrapped bread lost 3.32 per cent of its weight the first day, and that this loss increased to 12.53 per cent by the fifth day. The corresponding losses for the wrapped bread were 0.88 per cent and 3.70 per cent. There was a slight increase in acidity in both wrapped and unwrapped bread, but at the end of the week this was slightly greater in the unwrapped bread. After the second day the unwrapped bread was too dry for sale, while the wrapped bread was in good condition. The crust of the wrapped bread softened, the moisture became

TABLE I. BAKERS' AND

Serial No.	DESCRIPTION OF BREAD.	Weight in grams.						Percentage--		
		At beginning...	After 24 hours...	After 48 hours...	After 72 hours...	After 96 hours...	After 120 hours...	Loss.....	Water.....	Acidity calcu- lated to dry loaf.....
4046	Bakers' unwrapped.....	354.8	343.0					3.22	26.60	0.327
4047	do. wrapped.....	360.4	357.2					0.88	29.60	0.242
4048	do. unwrapped.....	370.8	360.3	352.2				5.00	26.70	0.231
4049	do. wrapped.....	368.2	363.7	359.5				1.82	27.90	0.238
4050	do. unwrapped.....	371.7	355.3	349.6	338.1			10.19	21.75	0.287
4051	do. wrapped.....	364.1	360.0	356.0	350.2			8.81	25.10	0.268
4052	do. unwrapped.....	345.7	337.8	327.8	318.8	308.6		10.98	20.30	0.314
4053	do. wrapped.....	380.2	376.5	371.4	366.0	359.6		5.41	27.10	0.314
4054	do. unwrapped.....	355.0	346.0	338.6	329.4	320.8	310.5	12.53	22.45	0.332
4055	do. wrapped.....	356.2	352.2	350.8	348.4	346.2	343.0	3.70	28.90	0.312
4056	"Homemade," unwrapped.....	396.5	380.4					4.08	32.80	0.254
4057	do. wrapped.....	413.8	409.8					0.96	35.00	0.249
4058	do. unwrapped.....	398.4	375.4	364.5				4.80	27.15	0.236
4059	do. wrapped.....	396.1	392.8	389.5				1.66	33.85	0.253
4060	do. unwrapped.....	372.1	357.7	342.7	332.4			10.31	25.90	0.308
4061	do. wrapped.....	382.5	378.8	373.7	368.7			3.67	30.80	0.296
4062	do. unwrapped.....	390.0	367.5	357.2	346.4	334.5		13.98	23.70	0.338
4063	do. wrapped.....	408.0	404.7	400.9	396.3	391.4		4.06	31.40	0.296
4064	do. unwrapped.....	394.1	376.6	365.3	354.4	344.1	335.3	14.92	22.10	0.306
4065	do. wrapped.....	404.1	401.2	398.3	394.6	391.0	385.5	4.60	32.40	0.301

TABLE II. GRAHAM

4066	Rye, unwrapped.....	355.7	346.2					2.83	32.30	0.436
4067	do. wrapped.....	363.7	365.7					0.81	32.00	0.430
4068	do. unwrapped.....	371.8	355.0	343.4				8.89	28.95	0.357
4069	do. wrapped.....	391.8	387.7	383.0				2.24	33.15	0.336
4070	do. unwrapped.....	373.5	368.2	357.1	344.4			9.99	28.85	0.422
4071	do. wrapped.....	389.0	385.0	381.1	375.9			3.33	32.15	0.409
4072	do. unwrapped.....	381.5	376.0	355.0	342.2	335.0		15.24	25.95	0.418
4073	do. wrapped.....	389.3	382.2	375.1	368.0	362.2		6.96	29.80	0.396
4074	do. unwrapped.....	371.6	356.2	346.3	335.4	319.7	312.5	16.27	22.45	0.431
4075	do. wrapped.....	398.7	393.8	389.2	384.0	372.2	370.3	7.12	28.15	0.429
4076	Graham, unwrapped.....	372.8	362.7					2.70	37.25	0.428
4077	do. wrapped.....	393.5	387.5					1.62	33.50	0.438
4078	do. unwrapped.....	362.9	348.7	338.8				6.69	28.75	0.396
4079	do. wrapped.....	425.0	417.9	409.5				3.78	30.00	0.394
4080	do. unwrapped.....	370.0	353.2	339.7	329.5			11.46	26.70	0.513
4081	do. wrapped.....	373.2	376.1	373.7	371.6			1.74	33.55	0.389
4082	do. unwrapped.....	385.2	376.0	367.2	361.4	352.2		8.56	26.25	0.405
4083	do. wrapped.....	389.5	382.1	375.2	368.2	363.5		8.40	29.35	0.434
4084	do. unwrapped.....	376.4	363.9	352.0	345.0	338.8	325.4	13.55	26.40	0.424
4085	do. wrapped.....	373.5	365.5	358.0	354.0	345.0	341.2	8.64	29.35	0.435

REMARKS: 1, better than No. 4048; 2, in excellent condition; 3, better than No. 4058; 4, better than No. 4066; 5, better than No. 4068; 6, better than No. 4076; 7, better than No. 4078.

uniformly distributed in the loaf, and at the end of five days it was still in excellent condition. Some who tasted it said they would prefer it to the fresh loaf.

Bakers' "Homemade" bread.—This bread was secured on the same day as the ordinary bakers' bread, having been baked at the same time. Table I shows the data secured on this bread. It lost from 4.06 per cent of its weight in one day to 14.92 per cent of its weight in five days, as compared with 0.96 per cent and 4.60 per cent for the wrapped bread. The slight increase in acidity is quite uniform for both wrapped and unwrapped bread. The unwrapped bread was too dry for sale after the second day. The crust of the wrapped bread softened, but did not get tough, and the moisture became uniformly distributed throughout the loaf. At the end of five days it

"HOMEMADE" BAKERS' BREAD.

Condition of—					Serial No.
Crust.	Interior.	Odor.	Taste.	Salability.	
Rather hard	Moist	Good	Good	Good	4046
Soft and moist	Moist	Good	Good	Good	4047
Hard	Slightly moist	Good	Good	Good	4048
Soft and moist	Moist	Good	Good	Good ^①	4049
Hard	Dry; center moist	Fairly good	Dry	Too dry	4050
Soft and moist	Moist	Good	Good	Good	4051
Dry and hard	Dry	Good	Good	Too dry	4052
Soft and moist	Uniformly moist	Good	Good	Good	4053
Dry and hard	Dry; center slightly moist	Good	Good	Too dry	4054
Soft and moist	Uniformly moist	Good	Good	Salable ^②	4055
Rather soft	Moist	Good	Good	Good	4056
Soft and moist	Moist	Good	Good	Good	4057
Hard	Rather dry; center moist	Good	Good	Good	4058
Soft and moist	Moist	Good	Good	Good ^③	4059
Dry and hard	Dry	Good	Dry	Too dry	4060
Soft and moist	Moist	Good	Good	Good	4061
Dry and hard	Dry	Fairly good	Dry	Too dry	4062
Soft and moist	Uniformly moist	Good	Good	Good	4063
Dry and hard	Dry; center slightly moist	Fairly dry	Dry	Too dry	4064
Soft and moist	Soft and moist	Uniformly moist	Good	Salable ^④	4065

AND RYE BREAD.

Moist and soft	Moist	Good	Good	Good	4066
Moist and soft	Moist	Good	Good	Good ^①	4067
Hard	Moist	Good	Good	Good	4068
Moist and soft	Moist	Good	Good	Good ^②	4069
Hard	Dry; center slightly moist	Good	Dry	Too dry	4070
Moist and soft	Moist	Good	Good	Good	4071
Very hard	Dry	Fairly good	Dry	Too dry	4072
Moist and soft	Moist	Good	Rather stale	Salable	4073
Very hard	Dry	Fairly good	Dry	Too dry	4074
Soft and moist	Getting dry	Fairly good	Rather dry	Might be sold	4075
Soft and moist	Moist	Good	Good	Good	4076
Soft and moist	Moist	Good	Good	Good ^③	4077
Getting hard	Moist	Good	Dry; good	Good	4078
Moist and soft	Moist	Good	Good	Good ^④	4079
Hard	Center slightly moist	Good	Rather dry	Too dry	4080
Soft and moist	Moist	Good	Good	Good	4081
Hard	Dry	Fairly good	Dry	Too dry	4082
Soft and moist	Good	Fairly good	Fairly good	Salable	4083
Hard	Dry	Fair	Dry	Too dry	4084
Soft and slightly moist	Getting dry	Fair	Fair	Might be sold	4085

was still in good condition, uniformly moist, and would be considered salable.

Rye bread.—Baked November 14, 1910, and taken from the oven at 7:45 A. M. Table II gives a statement of the data secured on this bread. The loss in weight for the unwrapped bread shows from 2.83 per cent for one day to 16.27 per cent for five days, as compared with 0.81 per cent and 7.12 per cent loss for the wrapped bread in the corresponding period. The acidity increased slightly but remained quite uniform in both wrapped and unwrapped bread. The crust of the unwrapped bread became hard after the first day, and after the second day its sale was doubtful. The wrapped bread remained uniformly moist, the crust softened, and we would consider it salable up to the fourth day. On the fifth day it was rather stale.

Graham bread.—This was secured the same day as the rye bread, and

TABLE III. WOLFE'S "SPECIAL"

Serial No.	DESCRIPTION OF BREAD.	Weight in grams.					Percentage—			
		At beginning	After 24 hours.	After 48 hours.	After 72 hours.	After 96 hours.	After 120 hours.	Loss.	Water.	Acidity calcu- lated to dry loaf.
4086	"Special," unwrapped	382.5	369.0					3.53	27.90	0.262
4087	do. wrapped	437.9	432.5					1.23	25.20	0.244
4088	do. unwrapped	393.3	384.2	370.2				5.37	27.85	0.246
4089	do. wrapped	424.4	420.3	414.0				2.45	30.60	0.268
4090	do. unwrapped	391.6	378.6	368.3				9.21	25.45	0.274
4091	do. wrapped	386.0	380.4	374.0				4.66	29.95	0.267
4092	do. unwrapped	410.0	396.3	384.6	355.5			10.97	25.00	0.269
4093	do. wrapped	427.6	422.3	416.3	410.2	402.3		5.90	27.90	0.265
4094	do. unwrapped	386.5	370.5	359.0	347.5	336.5	327.9	15.16	23.10	0.276
4095	do. wrapped	398.0	392.7	386.5	379.3	371.5	364.6	8.58	26.00	0.270
4096	"Vienna," unwrapped	398.6	380.1					9.45	31.10	0.281
4097	do. wrapped	419.4	413.6					1.33	33.25	0.268
4098	do. unwrapped	388.2	376.5	364.2				6.18	29.15	0.268
4099	do. wrapped	410.5	404.3	398.2				2.99	33.55	0.285
4100	do. unwrapped	400.5	385.1	375.1	365.1			8.83	27.40	0.287
4101	do. wrapped	405.2	399.6	392.5	385.0			4.98	31.00	0.286
4102	do. unwrapped	401.3	391.0	380.5	369.2	358.5		10.66	26.25	0.265
4103	do. wrapped	420.0	416.0	410.4	401.5	393.0		6.42	29.30	0.280
4104	do. unwrapped	384.6	372.4	359.5	348.2	338.7	330.2	17.80	20.00	0.270
4105	do. wrapped	400.4	394.4	388.7	380.5	373.5	366.6	8.44	28.00	0.262

TABLE IV. "CREAM (CYLINDRICAL)

4106	"Cream," unwrapped	379.0	369.2					2.70	31.15	0.273
4107	do. wrapped	394.0	394.0						32.30	0.265
4108	do. unwrapped	370.1	358.5	345.6				5.81	25.40	0.281
4109	do. wrapped	435.1	434.7	434.0				0.25	29.60	0.280
4110	do. unwrapped	362.7	371.5	360.5	350.1			8.39	25.30	0.268
4111	do. wrapped	398.1	397.4	396.5	395.2			0.72	31.12	0.286
4112	do. unwrapped	367.7	353.2	341.7	329.5	318.8		13.29	22.85	0.243
4113	do. wrapped	365.0	364.6	364.2	363.2	362.0		0.32	30.55	0.289
4114	do. unwrapped	375.5	363.0	353.5	341.1	330.2	319.5	14.91	20.55	0.265
4115	do. wrapped	405.1	405.0	404.4	403.4	402.4	400.9	1.08	31.90	0.319
4116	"French," unwrapped	417.7	405.9					2.82	33.39	0.265
4117	do. wrapped	436.7	425.7					0.23	34.95	0.247
4118	do. unwrapped	434.4	430.0	407.0				6.30	30.10	0.301
4119	do. wrapped	420.9	419.0	416.6				1.02	33.30	0.285
4120	do. unwrapped	407.2	390.5	377.5	366.4			10.02	26.85	0.287
4121	do. wrapped	441.6	440.2	437.2	434.4			1.68	33.90	0.301
4122	do. unwrapped	437.2	422.5	409.5	397.5	386.4		11.54	27.15	0.282
4123	do. wrapped	400.3	398.7	396.2	392.2	387.7		3.14	30.70	0.288
4124	do. unwrapped	434.5	421.0	402.2	389.6	388.0	365.7	15.82	23.80	0.282
4125	do. wrapped	435.4	433.7	430.9	427.2	423.0	418.1	3.54	31.50	0.271

REMARKS: 1, better than No. 4086; 2, better than No. 4088; 3, better than No. 4096; 4, better than No. 4098; 5, better than No. 4106; 6, better than No. 4108; 7, better than No. 4116; 8, better than No. 4113.

under the same conditions. Table II also shows the data secured on this bread. The loss in weight ranges from 2.7 per cent for one day to 13.55 per cent for one week for the unwrapped bread, as compared with 1.52 per cent and 8.64 per cent for the wrapped bread. The increase in acidity was slight and quite uniform. After the second day the unwrapped bread was too dry for sale, but the wrapped bread remained moist and in good condition until the fifth day. The loaf unwrapped the fifth day was rather stale.

Wolfe's "Special" bread.—Baked November 28, 1910. Taken from the oven at 6:30 A. M., carried to the laboratory and wrapped at 8:40 A. M. This bread was practically cold when wrapped. Table III gives a statement of the results obtained on this bread. The table shows, for the unwrapped bread, from 3.53 per cent loss for one day to 15.16 per cent loss for five days,

BREAD AND "VIENNA" BREAD.

Condition of—					Serial No.....
Crust.	Interior.	Odor.	Taste.	Salability.	
Soft and moist.....	Moist.....	Good.....	Good.....	Good.....	4086
Soft and moist.....	Moist.....	Good.....	Good.....	Good ①.....	4087
Rather dry and hard.....	Moist.....	Good.....	Good.....	Good.....	4088
Soft and moist.....	Moist.....	Good.....	Good.....	Good ②.....	4089
Dry and hard.....	Center moist.....	Fairly good.....	Rather dry.....	Doubtful.....	4090
Soft and moist.....	Moist.....	Good.....	Good.....	Good.....	4091
Hard and dry.....	Center moist.....	Fairly good.....	Dry.....	Too dry.....	4092
Moist.....	Uniformly moist.....	Good.....	Good.....	Good.....	4093
Dry.....	Dry.....	Fair.....	Dry.....	Too dry.....	4094
Getting dry.....	Uniformly moist.....	Good.....	Good.....	Salable.....	4095
Rather hard.....	Moist.....	Good.....	Good.....	Good.....	4096
Soft and moist.....	Moist.....	Good.....	Good.....	Good ③.....	4097
Rather dry and hard.....	Moist.....	Good.....	Good.....	Good.....	4098
Soft and moist.....	Moist.....	Good.....	Good.....	Excellent ④.....	4099
Dry and hard.....	Rather moist.....	Fair.....	Rather dry.....	Doubtful.....	4100
Moist and soft.....	Center uniformly moist.....	Good.....	Good.....	Good.....	4101
Dry and hard.....	Moist in center.....	Fair.....	Rather dry.....	Too dry.....	4102
Soft, getting dry.....	Moist.....	Good.....	Good.....	Good.....	4103
Dry.....	Center slightly moist.....	Fair.....	Dry.....	Too dry.....	4104
Soft, getting dry.....	Uniformly moist.....	Good.....	Slightly dry.....	Salable.....	4105

LOAF) BREAD AND "FRENCH" BREAD.

Moist and soft.....	Moist.....	Good.....	Good.....	Good.....	4106
Moist and soft.....	Moist.....	Good.....	Good.....	Good ⑤.....	4107
Rather dry.....	Moist.....	Good.....	Good.....	Good.....	4108
Soft and moist.....	Moist.....	Good.....	Good.....	Good ⑥.....	4109
Dry.....	Getting dry.....	Fair.....	Rather dry.....	?	4110
Soft and moist.....	Moist.....	Good.....	Good.....	Good.....	4111
Dry and hard.....	Dry; center moist.....	Fair.....	Dry.....	Too dry.....	4112
Soft and moist.....	Uniformly moist.....	Good.....	Good.....	Good.....	4113
Hard.....	Dry.....	Fair.....	Dry.....	Too dry.....	4114
Moist.....	Moist.....	Good.....	Good.....	Salable.....	4115
Moist and soft.....	Moist.....	Good.....	Good.....	Good.....	4116
Soft and moist.....	Moist.....	Good.....	Good.....	Good ⑦.....	4117
Rather dry.....	Moist.....	Good.....	Good.....	Good.....	4118
Soft and moist.....	Moist.....	Good.....	Dry.....	Good ⑧.....	4119
Hard and dry.....	Outside dry; center moist.....	Fair.....	Dry.....	Too dry.....	4120
Soft and moist.....	Uniformly moist.....	Good.....	Good.....	Good.....	4121
Dry and hard.....	Dry; center moist.....	Fair.....	Dry.....	Too dry.....	4122
Moist.....	Uniformly moist.....	Good.....	Good.....	Good.....	4123
Hard.....	Dry.....	Fair.....	Dry.....	Dry.....	4124
Moist.....	Uniformly moist.....	Good.....	Good.....	Salable.....	4125

as compared with 1.23 per cent to 8.58 per cent loss in the wrapped bread for the same period. There was a slight increase in acidity; however, it remained quite uniform in both. The salability of the unwrapped loaf was doubtful after the second day, as it became quite dry. The crust of the wrapped bread softened, the moisture became uniformly distributed, and the loaf opened on the fifth day was still in good condition.

Vienna bread.—Baked and secured the same day as the "Special" bread. The data on this bread can also be found in table III. The loss in weight shows a variation of from 3.45 per cent for one day to 17.80 per cent for five days in the unwrapped bread. For the corresponding period the loss in the wrapped bread was 1.38 per cent to 8.44 per cent. The slight increase in acidity is quite uniform. The unwrapped bread would hardly be salable after the second day, for it had become too dry and hard. The rather hard crust so characteristic of this bread softens up the second day

in the wrapped bread. The moisture was uniformly distributed in the loaf, and the flavor remained excellent. The fourth day found it still in good condition, and on the fifth day some who tasted it said they would prefer it to the fresh bread.

Cream bread.—This is the cylindrical loaf bread used so often for sandwiches. It was baked December 12, 1910, and taken from the oven at 8 A. M. The conditions for wrapping were the same as previously noted. Data on this bread are tabulated in table IV. The loss in weight on the unwrapped cream bread ranges from 2.70 per cent for one day to 14.91 per cent for five days, as compared with a total of 1.03 per cent for the wrapped bread during the corresponding period. The small per cent of loss in the wrapped bread can be explained by the fact that because of the shape of this bread we are able to roll it in several thicknesses of paper. The acidity increased slightly, but was a trifle greater in the unwrapped bread at the end of five days. The unwrapped bread soon got dry and hard; its salability after the second day would have been questionable. The crust of the wrapped bread softened, the moisture became uniformly distributed throughout the loaf, and at the end of five days it was still in excellent condition.

French bread.—This bread was secured the same day as the cream bread and handled under the same conditions. A tabulation of the data will be found in table IV. The unwrapped bread shows a loss in weight of 2.82 per cent for one day and 15.82 per cent for five days, as compared with a loss of 0.23 per cent and 3.54 per cent for the wrapped bread during the corresponding period. The acidity, while increasing slightly, remained practically uniform, and was a little greater in the unwrapped bread at the end of the week. The drying-out tendency of the unwrapped bread was again noted, as was also the questionableness of its salability after the second day. While the crust of the wrapped bread got soft and moist, the moisture became uniformly distributed throughout the loaf, and it was in good condition on the fifth day.

Common bakers' bread.—Wrapped in ordinary wrapping paper. On the same day the above bread was obtained we secured four loaves of common bakers' bread and wrapped it in ordinary wrapping paper. The weights and physical data were kept, and one loaf was taken from the experiment each day. Table V shows the data on this bread. The loss was 3.20 per cent the first day and 12.36 per cent the fourth day. This is practically the same as the unwrapped bread in table I. The bread was too hard and dry for sale after the second day. This showed that, so far as keeping the bread moist was concerned, common wrapping paper was of no benefit.

TABLE V. BAKERS' BREAD WRAPPED IN ORDINARY WRAPPING PAPER.

Serial No.....	DESCRIPTION OF BREAD.	Weight in grams.					Percentage loss.....
		At beginning.	After 24 hours.	After 48 hours.	After 72 hours.	After 96 hours.	
4126	Bakers'.....	390.0	377.5	.....	.....	.....	3.20
4127	".....	409.2	398.0	385.5	.....	.....	5.79
4128	".....	425.5	409.7	398.5	390.9	.....	8.13
4129	".....	409.7	395.2	382.6	371.2	359.7	12.36

TABLE V—CONCLUDED.

Serial No.....	Condition of—				
	Crust.	Interior.	Odor.	Taste.	Salability.
4126	Moist and soft.....	Moist.....	Good.....	Good.....	Good.
4127	Getting hard.....	Still moist.....	Fair.....	Good.....	Good.
4128	Hard.....	Outside dry, center moist.....	Fairly good.....	Rather dry.....	Too dry.
4129	Dry and hard.....	Dry; center slightly moist.....	Fair.....	Very dry.....	Too dry.

In looking over the data in general it will be found that the loss in weight for the unwrapped loaf was about twice as great as for the wrapped loaf ; the acidity remained practically the same ; the salability was prolonged to twice its ordinary period. With many people one of the most savory things about rye, Vienna and French bread is the hard crust. In fact the characteristic, peculiar, palatable flavor is due, partly at least, to the character of the crust. The moisture in the new loaf is greatest in the center and decreases to the crust, where it is least. When these kinds of bread are wrapped the crust softens promptly, as with other kinds. For this reason the desirability might be impaired for many people. We noticed that the original nut-like flavor did change slightly, but still considered the bread very palatable. The shape of the loaf we judge a better argument for not wrapping these particular kinds of bread.

Leaving out the purely sanitary reasons, which after all are the greatest, for wrapping bread, our results, if properly interpreted, can only argue in its favor.

If bread is only warm when wrapped it keeps better ; it does not get moldy ; the acidity does not increase any more for the wrapped than the unwrapped loaf ; the crust softens, but does not get tough ; it does not injure the flavor ; the moisture becomes uniformly distributed, resulting in a much better loaf.

Letters were sent to forty-five Kansas bakers in order to find out, if possible, their opinions regarding bread-wrapping. Only eighteen replies were received.

The questions asked, and summaries of the answers, follow :

QUESTIONS.

1. Are you now wrapping your bread in waxed paper?
2. How long have you wrapped your bread?
3. How much bread are you now wrapping?
4. Do your customers prefer wrapped bread?
5. How soon do you wrap the bread after it is baked?
6. Does wrapping hinder or aid the keeping qualities of bread?

7. Have your sales increased since wrapping, and if so, how much?
8. Do you consider it practicable to wrap all kinds of bread?
9. Do you consider that wrapping bread is practicable for the small baker?
10. Do you consider the extra cost incurred in wrapping an argument against its use?

Any additional information you may care to add will be appreciated.

ANSWERS.

1. Four stated that they are wrapping.
2. Two are just beginning; the other two have wrapped up to two and one-half years.
3. One baker is wrapping 1000 loaves a day; another, 1500 loaves a day. The other two have just begun wrapping bread.
4. The bakers who wrap bread say their customers prefer it; the others say they don't. The common saying is, "The customers want to see what they are buying."
5. The opinion seems to prevail that the proper time for wrapping is from one to two hours after baking, or when it has acquired room temperature.
6. The bakers wrapping bread say "It aids"; the others say the opposite.
7. One large baker says his sales have increased about 500 per cent; another says that the increase in wrapped bread has caused a falling off in the sales of unwrapped bread.
8. The universal answer is, "No." They nearly all say that it is only practicable to wrap ten-cent loaves. Most of the bakers think that wrapping spoils the flavor of rye and "Vienna" bread.
9. The bakers wrapping their bread say "Yes"; those not wrapping bread say "No."
10. The ones wrapping bread consider it an argument against wrapping five-cent loaves; the ones not wrapping consider it an argument against wrapping any kind of loaves.

The answers show that the bakers who have tried bread wrapping favor it, and that their sales have increased. The opposition displayed in many letters is evidently due to ignorance.

The inquiry at least reveals this fact—that any innovation in this line would not be welcomed by Kansas bakers.

Andrew French, dairy and food commissioner of Minnesota, is gratified over the decision of the supreme court of that state in the case of Jacob Nieman vs. the Chennelene Oil and Manufacturing Company, in which the court held that the jobber or manufacturer "who sells adulterated or poisonous cooking oil to a retail merchant is liable to the vendee for his consequent loss of business in selling the product to his customers."

Fifty-two people out of 2763 in Vienna were found to be carriers of the germ-producing cerebrospinal-meningitis, although they were in apparent good health.

FOOD ANALYSES No. XXXII.

By Prof. E. H. S. BAILEY, Ph. D., Chemist for the State Board of Health, and Asst. Prof. H. LOUIS JACKSON, M. S., Food Analyst.

TERPENELESS LEMON EXTRACT.

It is desirable that the general public should be very well informed as to the nature of the food products it purchases and of the condition in which they are found. If the public is not so informed and does not make its purchases with discrimination the work of the food inspectors and analysts is in part nullified.

To understand the question of "Terpeneless Lemon Extract" it is necessary to consider lemon extract for a moment. "Lemon Extract" is made by dissolving 5 per cent of pure oil of lemon in 80-per-cent (or still stronger) alcohol. Such strong alcohol is necessary because lemon oil will not entirely dissolve in alcohol much weaker than 80 per cent. Oil of lemon is the oil that is obtained from the yellow skin of ripe lemons by pressure.

There is one advantage to the housewife in buying "Lemon Extract" instead of "Terpeneless Lemon Extract": she can tell whether it is made of strong—that is, 80 per cent—alcohol or not, and if it contains lemon oil. Upon vigorously shaking a bottle of genuine lemon extract a foam of bubbles will gather at the surface of the liquid but will immediately break and leave no foam, while a preparation made from weak alcohol cannot be a genuine lemon extract and the foam produced by vigorous shaking will last several moments and very noticeably longer than in the case of genuine lemon extract. Again, when a teaspoonful of pure lemon extract is poured into a quarter of a glass of hot water a white, cloudy appearance will be produced, about the same as though the same quantity of milk had been added to the water. At the same time the glass will be found to have a very strong, pungent, but pure lemon-peel odor. If the glass is set where it will remain hot for a half hour the milky appearance will leave it and quite an amount of a clear, nearly colorless oil will be seen floating on the surface. The failure of the foam to disappear nearly instantly, or the failure to produce the milky effect in hot water, with the attendant strong pure lemon-peel flavor and separation of oil on the surface after standing, would stamp the product as not being lemon extract. Of course, one must carefully bear in mind that these are rough-and-ready tests and would not detect extract made from an adulterated lemon oil and would not show that one had a 3-per-cent extract

when he should have received a 5-per-cent extract. Only 5-per-cent extract is legal and of full standard strength.

In the case of "terpeneless" lemon extract the housewife has not these safeguards, for the following reasons: Terpeneless lemon extract will retain its foam a considerable time after shaking, whether it be good or bad, and will produce scarcely any cloudy appearance when poured into water, and there is no easy test the housewife can apply to see if the product is very weak or not. The following table shows many of the terpeneless lemon extracts to be weak, as the citral content should be 0.200 per cent for a standard product. Terpeneless lemon oil is pure lemon oil from which certain bodies called terpenes have been removed. This gives a product which contains the essential lemon-peel flavor and which will dissolve in 50-per-cent alcohol.

Of course, the incentive which leads manufacturers to put terpeneless lemon extract on the market is that it is cheaper for them to produce than lemon extract. A simple calculation will show the difference.

Cost of alcohol *alone* for one gallon of lemon extract—alcohol at \$2.80 a gallon: One gallon 80-per-cent alcohol = \$2.38.

The cost of either lemon oil or terpeneless lemon oil is insignificant in comparison with the alcohol, on account of the small amount of oil needed.

Cost of alcohol *alone* for one gallon of terpeneless lemon extract—alcohol at \$2.80 a gallon: One gallon 50-per-cent alcohol = \$1.49.

This shows a saving of eighty-nine cents a gallon for alcohol. Some of the extracts reported below contain only 40-per-cent alcohol, some 30 and some below 20. More money is saved to the manufacturer by these lower strengths of alcohol. For example: One gallon of 40-per-cent alcohol costs \$1.19; one gallon of 30-per-cent alcohol costs 90 cents; one gallon of 20-per-cent alcohol costs 60 cents; making savings per gallon over the cost of alcohol necessary for a lemon extract of \$1.19 for 40-per-cent alcohol, \$1.48 for 30-per-cent alcohol and \$1.70 for 20-per-cent alcohol.

Therefore, the cost of a terpeneless extract of lemon to the consumer should be from one-half to one-quarter of that asked for a lemon extract. The question is, Does the consumer get the benefit of this lower cost of manufacture? From the table it is seen that the retail price (as far as given by the inspectors) varies from 3.74 cents to 10 cents per ounce, with an average of 6.65 cents. The average price of nineteen lemon extracts previously reported is 10.1 cents per ounce. On the average, then, they may be said to sell for less than lemon extract.

There is one other point for the consuming public to consider, and that is value received. In this case it is amount of flavoring material. It is an important point, for the authors have examined extracts of such weakness that a whole bottle full would not flavor as much as a half teaspoonful of a standard extract. In order to

judge the present extracts, the column headed "Relative price" has been inserted. This figure simply shows, for example, that No. 6487 is the cheapest extract to buy when considering flavor, for it contained the most citral at the lowest price per ounce. Making this unity then, a comparison with No. 9355 shows this as costing three times as much, since it has a very low per cent of citral and a relatively high price. Some extracts might have been found still worse, but the retail price was not available for comparison.

The present examination would tend to show that unless the so-called "half-strength" or "one-quarter strength" extracts sell for considerable less than one-half or one-quarter the price respectively of standard extracts it is extravagant to buy them, for, as shown in this collection, they are usually much less than even half or quarter strength.

ILLEGAL TERPENELESS LEMON EXTRACT.

Inspector's number.....	Citral, per cent.....	Strength claimed, in per cent. (Standard strength is represented by 100).....	Strength found, in per cent. (Standard strength is represented by 100).....	Shortage—that is, claimed strength minus strength found.....	Retail price per ounce, in cents.....	Relative price.....	Alcohol, per cent, about.....	Remarks.
1207	0.021	25	10.5	14.5	.....	.....	32.0	Substandard goods. Less than one-half of strength claimed.
1420	0.029	50	14.5	35.5	.....	.....	36.0	Substandard goods. One-third of strength claimed.
6209	0.070	100	35.0	65.0	.....	.....	43.5	About one-third of strength claimed.
6484	0.135	100	67.5	32.5	6.66	1.4	46.0	About two-thirds of strength claimed.
6486	0.080	100	15.0	85.0	.....	.....	17.5	Less than one-sixth of strength claimed.
6487	0.106	100	53.0	47.0	8.74	1.0	41.5	About one-half of strength claimed.
7772	0.184	100	92.0	8.0	10.00	1.5	45.5	About nine-tenths of strength claimed.
7774	0.196	100	38.0	2.0	10.00	1.4	48.0	Slightly below standard.
7774A	0.080	100	40.0	60.0	5.00	1.8	48.0	Less than one-half of strength claimed.
7775	0.130	100	65.0	35.0	6.66	1.4	43.0	About two-thirds of strength claimed.
7781	0.145	100	72.5	27.5	6.66	1.3	45.0	Less than three-quarters of strength claimed.
7787	0.130	100	65.0	35.0	7.05	1.5	46.0	About two-thirds of strength claimed.
7791	0.088	100	44.0	56.0	6.54	2.1	49.5	Less than one-half of strength claimed.
9054	0.086	100	43.0	57.0	.....	.....	43.5	Less than one-half of strength claimed.
9052	0.120	100	60.0	40.0	.....	.....	46.0	Less than two-thirds of strength claimed.
9234	0.144	100	72.0	28.0	6.66	1.3	46.0	Less than three-quarters of strength claimed.
9206	0.160	100	80.0	20.0	6.66	1.2	43.5	Eight-tenths of strength claimed.
9210	0.063	50	28.5	23.5	.....	.....	37.5	Substandard goods. About one-half of strength claimed.
9350	0.071	50	35.5	14.5	4.75	1.9	36.0	Substandard goods. Less than strength claimed.
9853	0.033	50	33.0	17.0	.....	.....	37.0	Substandard goods. One-third of strength claimed.
9855	0.047	50	23.5	26.5	5.00	3.0	36.0	Substandard goods. Less than one-half of strength claimed.
9356	0.166	100	83.0	17.0	8.20	1.4	47.0	About eight-tenths of strength claimed.
9356A	0.100	100	50.0	50.0	.....	.....	.....	Half the strength claimed.
9356B	0.178	100	89.0	11.0	.....	.....	44.0	About nine-tenths of strength claimed.
9359	0.068	100	34.0	66.0	5.00	2.1	45.0	About one-third of strength claimed.
9652	0.130	100	90.0	10.0	.....	.....	.....	Nine-tenths of strength claimed.
9864	0.130	100	65.0	35.0	6.66	1.4	.....	Less than two-thirds of strength claimed.
9865	0.060	100	30.0	70.0	5.00	2.4	.....	Less than one-third of strength claimed.

Average price per ounce, terpeneless extracts, 6.65 cents.
 Average price per ounce of nineteen lemon extracts previously reported, 10.1 cents.
 Additional data on this subject will be continued in the April Bulletin.

THOMAS JEFFERSON'S LETTER
TO EDWARD JENNER.

MONTICELLO, VA., May 14, 1806.

SIR — I have received a copy of the evidence at large, respecting the discovery of the vaccine inoculation, which you have been pleased to send me, and for which I return you many thanks. Having been among the early converts of this part of the globe to its efficacy I took an early part in recommending it to my countrymen. I avail myself of this occasion to render you my portion of the tribute and gratitude due to you from the whole human family. Medicine has never before produced any single improvement of such utility. Harvey's discovery of the circulation of the blood was a beautiful addition to our knowledge of the ancient economy; but on a review of the practice of medicine before and since that epoch, I do not see any great amelioration which has been derived from that discovery. You have erased from the calendar of human afflictions one of its greatest. Yours is the comfortable reflection that mankind can never forget that you have lived; future nations will know by history only that the loathsome small-pox has existed, and by you has been extirpated. Accept the most fervent wishes for your health and happiness, and assurance of the greatest respect and consideration.

THOS. JEFFERSON.

BULLETIN

OF THE

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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DEACON, Statistician.

No. 4.

APRIL, 1911.

VOL. VII

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**SWAT
THE
FLY.**

No filth, no flies.

When does a good egg become a bad egg?

The annual visitation of the Typhoid fly has arrived.

For the fifth season we remark: **SWAT THE FLY!**

The fly problem is the problem of teaching the Nation to be clean.

The bacteriological standard for eggs was put to route at the "battle of Trenton."

The most dangerous nuisance in your community is the manure pile, the chief breeding place of the Typhoid fly.

The presence of considerable numbers of bacteria in an egg does not necessarily indicate that the egg is decomposed.

An old can, bottle or other vessel that may hold rain water, makes a favorite breeding place for the mosquito. Clean up!

"The fly disseminates disease, so therefore you should swat;

Unswatted flies are very bad, but swatted flies are not."

Every place in Kansas where food or drug products are manufactured, sold or offered for sale, is required to be properly and effectively screened; this includes hotels.

VITAL STATISTICS

Reported to the Kansas Board of Health for March, 1911.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
The State... totals, March, 1910.....	248 306	64 92	19 54	4 12	56 107	6 13	363 281	10 17	490 256	2 0	1314 2598	10 28
Allen	2	2	0	0	1	0	2	0	0	0	1	1
Anderson	0	0	0	0	0	0	0	0	0	0	0	0
Atchison	0	0	1	0	0	0	0	0	27	0	0	0
Barber												
Barton	4	1	0	0	1	1	19	1	1	0	0	0
Bourbon	1	0	1	0	0	0	0	0	0	0	1	1
Brown	2	2	0	0	1	1	5	1	9	1	0	0
Butler	0	0	1	0	0	0	2	0	0	0	1	0
Chase	0	0	0	0	0	0	0	0	0	0	0	0
Chautauqua.....												
Cherokee.....	3	3	0	0	0	0	8	0	63	0	1	1
Cheyenne.....	0	0	1	0	0	0	1	0	0	0	0	0
Clark												
Clay	0	0	0	0	0	0	0	0	0	0	0	0
Cloud	0	0	0	0	0	0	0	0	54	0	27	0
Coffey	1	1	0	0	0	0	20	0	0	0	8	0
Comanche												
Cowley	1	0	0	0	0	0	3	0	0	0	5	0
Crawford												
Decatur.....	0	0	0	0	0	0	7	1	0	0	0	0
Dickinson.....	0	0	0	0	0	0	0	0	10	0	1	0
Doniphan.....	3	3	0	0	1	0	3	0	20	0	15	0
Douglas.....	2	1	2	0	7	0	17	0	0	0	17	0
Edwards.....	0	0	0	0	4	1	34	1	0	0	14	0
Elk	0	0	0	0	0	0	4	0	0	0	0	0
Ellis	0	0	0	0	0	0	0	0	0	0	0	0
Ellsworth.....	0	0	0	0	0	0	4	0	0	0	8	0
Finney.....	0	0	0	0	0	0	0	0	0	0	15	0
Ford	0	0	1	1	1	0	6	0	1	0	0	0
Franklin.....	3	3	0	0	0	0	0	0	0	0	0	0
Geary	1	1	0	0	0	0	0	0	0	0	3	1
Gove												
Graham.....	0	0	0	0	0	0	0	0	0	0	13	0
Grant												
Gray	0	0	0	0	0	0	0	0	0	0	2	0
Greeley.....	0	0	0	0	0	0	0	0	0	0	16	0
Greenwood.....	1	1	0	0	0	0	32	0	73	0	108	1
Hamilton.....	0	0	0	0	0	0	0	0	0	0	0	0
Harper.....	0	0	0	0	0	0	0	0	3	0	30	0
Harvey.....	0	0	0	0	0	0	2	0	0	0	5	0
Haskell.....	0	0	0	0	0	0	0	0	0	0	2	0
Hodgeman.....	0	0	0	0	0	0	0	0	0	0	0	0
Jackson.....	1	0	0	0	0	0	0	0	5	0	2	0
Jefferson.....	1	1	0	0	0	0	0	0	12	0	0	0
Jewell												
Johnson.....	0	0	0	0	0	0	0	0	10	0	3	0
Kearny.....	0	0	0	0	0	0	0	0	2	0	18	0
Kingman.....	1	0	0	0	0	0	0	0	0	0	2	0
Kiowa												
Labette.....	2	0	1	0	0	0	0	0	0	0	1	0
Lane	1	0	0	0	0	0	2	0	0	0	1	0
Leavenworth.....	0	0	1	0	0	0	2	1	2	0	1	0
Lincoln.....	1	0	0	0	0	0	0	0	0	0	1	1
Linn	0	0	0	0	0	0	0	0	3	0	0	0
Logan.....												
Lyon	1	1	1	1	3	0	0	0	0	0	25	0
Marion.....	1	0	0	0	0	0	3	0	0	0	4	0
Marshall.....	0	0	0	0	0	0	5	0	1	0	0	0
McPherson.....	0	0	1	0	0	0	0	0	2	0	23	0

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTRIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
Meade.....	0	0	0	0	0	0	14	0	0	0	4	0
Miami.....	1	0	0	0	0	0	0	0	0	0	0	0
Mitchell.....	0	0	1	0	0	0	0	0	18	0	0	0
Montgomery.....	0	0	0	0	0	0	1	0	4	0	7	0
Morris.....	1	1	1	0	3	0	3	0	9	0	23	0
*Morton.....	0	0	0	0	0	0	0	0	0	0	0	0
Nemaha.....	0	0	0	0	0	0	0	0	0	0	0	0
Neosho.....	1	1	1	0	2	0	5	0	0	0	25	0
Ness.....	0	0	0	0	0	0	0	0	0	0	3	0
Norton.....	1	0	0	0	0	0	0	0	2	0	1	0
Osage.....	2	2	1	0	2	0	13	0	1	0	9	0
Osborne.....	1	1	0	0	0	0	0	0	0	0	31	0
Ottawa.....	0	0	0	0	4	0	1	0	22	0	7	0
Pawnee.....	0	0	0	0	0	0	12	0	0	0	0	0
Phillips.....	0	0	0	0	0	0	0	0	0	0	0	0
Pottawatomie.....	0	0	0	0	0	0	12	0	7	0	0	0
Pratt.....	1	0	0	0	0	0	2	0	0	0	300	3
Rawlins.....	0	0	0	0	0	0	0	0	0	0	1	0
*Reno.....	0	0	0	0	0	0	0	0	0	0	0	0
Republic.....	1	1	0	0	0	0	1	0	9	0	14	0
*Rice.....	0	0	0	0	0	0	0	0	0	0	0	0
Riley.....	0	0	0	0	0	0	45	1	0	0	64	0
Rooks.....	0	0	0	0	0	0	0	0	1	0	4	0
*Rush.....	0	0	0	0	0	0	0	0	0	0	0	0
*Russell.....	0	0	0	0	0	0	0	0	0	0	0	0
Saline.....	1	1	0	0	0	0	6	0	8	0	74	1
Scott.....	1	1	0	0	0	0	0	0	0	0	0	0
Sedgwick.....	3	0	0	0	0	0	1	0	0	0	6	0
Seward.....	0	0	0	0	0	0	5	0	0	0	0	0
Shawnee.....	1	0	0	0	2	0	2	0	0	0	3	0
Sheridan.....	0	0	0	0	0	0	0	0	0	0	0	0
Sherman.....	0	0	0	0	0	0	0	0	0	0	0	0
Smith.....	0	0	0	0	0	0	7	2	0	0	0	0
*Stafford.....	0	0	0	0	0	0	0	0	0	0	0	0
*Stanton.....	0	0	0	0	0	0	0	0	0	0	0	0
Stevens.....	0	0	0	0	0	0	0	0	0	0	0	0
*Sumner.....	0	0	0	0	0	0	0	0	0	0	0	0
Thomas.....	0	0	0	0	0	0	0	0	1	0	1	0
Trego.....	1	0	0	0	0	0	4	0	0	0	20	0
Wabausee.....	0	0	1	0	0	0	7	0	0	0	4	0
*Wallace.....	0	0	0	0	0	0	0	0	0	0	0	0
*Washington.....	0	0	0	0	0	0	0	0	0	0	0	0
*Wichita.....	0	0	0	0	0	0	0	0	0	0	0	0
Wilson.....	0	0	0	0	0	0	2	0	0	0	66	0
Woodson.....	1	0	0	0	1	0	1	1	0	0	1	0
Wyandotte.....	0	0	0	0	0	0	1	0	8	0	0	0
Cities:												
Fort Scott.....	3	2	0	0	1	0	0	0	0	0	2	0
Atchison.....	0	0	0	0	0	0	1	0	1	0	0	0
Coffeyville.....	2	1	0	0	0	0	0	0	5	0	2	0
Kansas City.....	4	18	2	1	9	2	19	0	21	0	23	0
Leavenworth.....	4	4	1	1	2	1	1	0	1	1	82	0
Parsons.....	3	3	0	0	0	0	10	1	0	0	4	0
*Pittsburg.....	0	0	0	0	0	0	0	0	0	0	0	0
Topeka.....	1	1	0	0	9	0	7	0	8	0	49	0
Wichita.....	6	6	0	0	2	0	4	0	2	0	109	0
State Institutions.....	170	1	0	0	0	0	0	0	0	0	0	0

* No reports.

The relation of physical defects to mental development is being recognized more and more by parent and teacher as well as the "family doctor." With the cure of deafness, "stupidity" has vanished, and the fitting of appropriate "glasses" has been the finding of a bright scholar.

FOOD ANALYSES No. XXXII.

(By Prof. E. H. S. BAILEY, Chemist for the State Board of Health, and Asst. Prof. H. LOUIS JACKSON, M. S., Food Analyst.

ADDITIONAL DATA TO ILLEGAL TERPENELESS LEMON LISTED IN THE TABLE IN THE MARCH BULLETIN.

No. 1207. Label, "Banner Brand, One-fourth Standard Strength Terpeneless Lemon Flavor." Packed for the Theo. Poesler Mercantile Company, Lawrence and Emporia. See table. Illegal.

No. 1420. Label, "Leader Terpeneless Lemon Extract, Half Strength." Manufactured for Rohlfing & Co. Wholesale Grocery Company, Leavenworth. Retailer, H. Ebirth, Wallula. See table. Illegal.

No. 2695. Label, "Concentrated Extract of Orange." Manufacturer, Parke, Davis & Co., Detroit, Mich. Retailer, B. A. Roy, Dwight. Citral, 0.063 per cent. Illegal.

Nos. 6209 and 6210. Label, "Frontier 1846 Brand Extract of Terpeneless Lemon. Alcohol, 50 per cent." Manufacturer, Nave-McCord Mercantile Company, St. Joseph, Mo. Retailer, Boyce & F. Grocery, Rexford. See table. Illegal.

No 6484. Label, "Golden Robin Brand Terpeneless Lemon Extract." Manufactured for Hutchinson Wholesale Grocery Company, Hutchinson. Retailer, Cullison Mercantile Company, Cullison. See table. Illegal.

No. 6485. Label, "Orient Brand Terpeneless Lemon Flavor." Packed for Anthony Wholesale Grocery Company, Anthony. Retailer, Coldwater Cash Mercantile Company, Coldwater. See table. Illegal.

No. 6487. Label, "Rose Bud Brand Terpeneless Lemon." Manufacturer, Hanley & Kinsella, St. Louis. Jobber, Aylesburg Mercantile Company, Wichita. Retailer, E. E. Baird, Zenda. See table. Illegal.

No. 7772. Label, "Palace Car Brand Extract of Terpeneless Lemon." Jobber, McCord-Kistler Mercantile Company, Topeka. Retailer, A. H. Upton, Elmdale. See table. Illegal.

No. 7774. Label, "Shepard's Economical Flavoring Terpeneless Lemon Extract. Serial No. 11,648." Manufacturer, Shepard Baking Powder Company, St. Louis, Mo. Retailer, A. Funke & Co., Burns. See table. Slightly below standard.

No. 7774A. Label, "Ayer's Brand Terpeneless Extract Lemon." Packed for Kansas City Wholesale Grocery Company, Kansas City, Mo. Retailer, W. H. Alsop, Fort Scott. See table. Illegal.

No. 7775. Label, "Old Fort Brand Terpeneless Extract of Lemon." Bottled for the Fort Scott Wholesale Grocery Company, Fort Scott. Retailer, W. Sheppard, Fort Scott. See table. Illegal.

No. 7781. Label, "Golden Robin Brand. Serial No. 2639. Terpeneless Extract of Lemon." Manufactured for the Hutchinson Wholesale Grocery Company, Hutchinson. Retailer, Akens & Son, Stafford. See table. Illegal.

No. 7787. Label, "Terpeneless Lemon Flavor." Manufacturer, Boerner-Fry Company, Iowa City, Iowa. Retailer, John Ehrlich's Sons, Marion. See table. Illegal.

No. 7791. Label, "Terpeneless Lemon." Manufacturer, Forbes Bros.' Tea and Spice Company, St. Louis, Mo. Retailer, Richardson Bros., Marion. See table. Illegal.

No. 9054. Label, "Tone's Gilt Edge Terpeneless Extract Lemon." Manufacturer, Tone Bros., Des Moines, Iowa. See table. Illegal.

No. 9062. Label, "Banner Brand Terpeneless Lemon Extract." Manufactured for the Theo. Poehler Mercantile Company, Lawrence. See table. Illegal.

No. 9206. Label, "Palace Car Brand Terpeneless Lemon." Manufacturer, McCord-Kistler Mercantile Company, Topeka. Retailer, Driesbach Bros., Topeka. See table. Illegal.

No. 9210. Label, "2 oz. Full Measure American Beauty Brand Terpeneless Half Strength Lemon Flavor, 40% Alcohol." Manufactured for Kansas City Wholesale Grocery Company, Kansas City, Mo. See table. Illegal.

No. 9234. Label, "Banner Brand Terpeneless Lemon Extract. Serial No. 2639." Manufacturer, Theo. Poehler Mercantile Company, Lawrence. Retailer, J. A. Drake, Scranton. See table. Illegal.

No. 9350. Label, "American Beauty Brand Terpeneless Half Strength Lemon Flavor, 40% Alcohol." Manufacturer, Kansas City Wholesale Grocery Company, Kansas City, Mo. Retailer, M. G. Frey, White City. See table. Illegal.

No. 9355. Label, "Ideal Terpeneless Half Strength Lemon Flavor." Manufacturer, Long Bros. Grocery Company, Kansas City, Mo. Retailer, L. C. Shafer, Manhattan. See table. Illegal.

No. 9356. Label, "Eagle Brand Lemon Terpeneless Extract." Manufacturer, Blanke-Baer Chemical Company, St. Louis, Mo. Retailer, N. E. Engle, Manhattan. See table. Illegal.

No. 9356A. Label, "Buster Brown Brand Extract of Terpene-

less Lemon. 1 oz. Full Measure, 50% Alcohol." Manufacturer, Steinwender-Stoffregen Coffee Company. See table. Illegal.

No. 9356B. Label, "Frontier 1846 Terpeneless Lemon Extract. 1½ oz. Alcohol not over 45%." Manufacturer, Nave-McCord Mercantile Company, St. Joseph, Mo. See table. Illegal.

No. 9359. Label, "Tone's Gilt Edge Terpeneless Extract Lemon. 2 ozs. True Measure." Manufacturer, Tone Bros., Des Moines, Iowa. Retailer, Doran & Doran, Twin Mounds. See table. Illegal.

No. 9362. Label, "Palace Car Brand Extract of Terpeneless Lemon." Manufacturer, McCord-Kistler Mercantile Company, Topeka. Retailer, M. J. Fitzgerald, Topeka. See table. Illegal.

No. 9364. Label, "Frontier 1846 Brand Terpeneless Lemon Extract. 1½ oz. Alcohol not over 45%." Manufacturer, Nave-McCord Mercantile Company, St. Joseph, Mo. Retailer, C. Tomson & Son, Paxico. See table. Illegal.

No. 9365. Label, "Ayer's Brand Terpeneless Extract Lemon." Packed for Kansas City Wholesale Grocery Company, Kansas City, Mo. Retailer, Zeller & Frey, Paxico. See table. Illegal.

DRUG ANALYSES No. XXXV.

By L. E. SAYRE, Director; L. D. HAVENHILL, Chief; G. N. WATSON, Analyst;
C. M. STERLING, Microscopist.

The drug products and preparations sent in to the laboratory for analysis since the last month have consisted of the usual variety of preparations, as will be seen by the subjoined report.

It may be well to again state that the examination of all pepsin preparations consists first in making a corresponding preparation according to the National Formulary or other standard work. In certain unofficial pepsin preparations the nearest allied National Formulary preparations are taken as standard. If, for example, an "Elixir of Lactated Pepsin, Iron, Quinine and Strychnine" (unofficial) should be presented for examination, the National Formulary "Elixir of Pepsin" is employed as a standard for pepsin strength. For this preparation thus made there is taken in each case an amount of liquid corresponding to 0.003 gram of pepsin and the process is so adjusted that at the end of two and one-half hours' digestion there should be left (if the preparation is of standard pepsin strength) not more than 1 cc. of undigested albumin. We stated in the January BULLETIN, 1910, that we were impressed with the lack of keeping qualities of pepsin preparations in connection with elixir and vinous vehicles. National Formu-

lary preparations which have been made by us and kept for four weeks have lost in peptic power from 10 to 30 per cent. We reiterate what we said formerly, that our study of the question of pepsin preparations leads us to believe that if physicians wish to employ an elixir or wine of pepsin in their practice these preparations should be made extemporaneously from fresh material, and the patient should be informed that after a certain date the liquid ceases to be of value.

The present report includes an analysis of preparations of "Elixir of Iron, Quinine and Strychnine Phosphate." It is well known that this is an official preparation, and when it is made by the United States Pharmacopœial formula is of transparent, greenish-yellow color and has a specific gravity of about 1.0876, and should contain in 100 cc. 0.9025 of total alkaloids, of which 0.875 is quinine and 0.0275 is strychnine. In the separation of the alkaloids the usual "washing-out process" is employed, ether and chloroform being used to extract the alkaloids from alkaline solutions. The washing with these ethereal solvents is continued until the liquid ceases to yield alkaloids. The ether-chloroform solution is evaporated and the residue weighed. The official preparation, as made in our laboratory according to the official formula, when assayed by the above-described process, yields 0.898 of total alkaloids, a loss of alkaloids of 0.0045 gram in 100 cc. It should be stated that many of the elixirs are not made by the pharmacists, but are supplied by various manufacturers, and we note from the various price lists that different alkaloidal strengths of this preparation are sold. It should be understood that this preparation in Kansas should conform with the official formula, and any unreasonable deviation therefrom should be considered as illegal. Pharmacists who do not make this medicinal elixir themselves, but who buy it ready made, should see to it that they have a guarantee as to its strength and purity. The Board of Health, it should be stated, has not made any prosecutions regarding substandard elixirs of this sort, but has been endeavoring in every possible way to avoid these by urging pharmacists to be careful with regard to the preparations. A warning in regard to it was sent out in the February, 1910, BULLETIN, and it is fair to assume that the time may come in the near future when the Board of Health will take more active measures to unify this preparation.

TINCTURES FROM FLUID EXTRACTS.

This laboratory is receiving constantly tinctures which do not correspond with the corresponding official preparations. This is

probably due to the fact that a great many pharmacists are making their tinctures by diluting fluid extracts. The result is a preparation which does not correspond to the requirements of the Pharmacopœia or to the requirements of the food and drugs law of the state of Kansas, which reads: "The preparations should be required to conform in strength, quality and purity to the standards prescribed or indicated for a preparation of the same name recognized in the United States Pharmacopœia or the National Formulary"; and it is also stated in this law that medicinal products are required to conform in composition to the fresh preparation and nondeteriorated article, etc. Now if a tincture, such as tincture of belladonna, is made from diluting a fluid extract of the leaves, if it does not conform in color, in solid constituents and in other physical properties to the preparation made from the drug as directed in the United States Pharmacopœia, this preparation runs the risk of being considered illegal, although its alkaloidal strength may be up to the standard. Many of these tinctures made from the fluid extracts not only differ from the official preparations in essential constituents but differ from them in important physical characteristics. Therefore it is advisable that the pharmacists adhere strictly to the Pharmacopœia in making official preparations; otherwise, there is a liability of inviting unpleasant criticism.

The report of analyses is hereby appended:

Lab. No.	Insp. No.	NAME.	Acidity.	Color.	Amount of undigested albumin remaining.*
4523	2723	Elixir of Pepsin and Bismuth.	Low	Light brownish	19.0 cc.
4536	2736	Elixir of Pepsin	..	Reddish brown	21.5
4649	2749	Essence of Pepsin	Normal	..	3.0
4551	2751	Fluid Pepsin	Low	..	4.5
4811	8831	Essence of Pepsin	..	Light yellow	31.2
4825	8845	Essence of Pepsin	Normal	Normal	3.1
4836	8866	Essence of Pepsin	Low	Light yellow	34.7
4849	8884	Essence of Pepsin	..	..	1.0
4887	8913	Essence of Pepsin	Normal	Normal	2.0
4888	8914	Essence of Pepsin	Nearly normal	Light yellow	13.0
4889	8915	Essence of Pepsin	Normal	Normal	36.0
4895	8921	Essence of Pepsin	Nearly normal	..	7.0
4901	8927	Essence of Pepsin	Normal	..	1.2

* Not more than 1 cc. of undigested albumin should remain.

TINCTURE OF GINGER.*

Lab. No.	Insp. No.	NAME.	City.	Per cent alcohol.	Remarks.
4773	8776	Owl Drug Store	Pratt	90.5	Passed.
4784	8787	Popular Pharmacy (F. R. Sheets)	Strong City	88.3	..

* Tincture of ginger should contain about 91 per cent of alcohol.

SPIRIT OF CAMPHOR.*

Lab. No.	Insp. No.	NAME.	City.	Per cent camphor in 100 cc.	Added water.	Remarks.
4772	8775	Cockran's Pharmacy....	Iola.....	7.68	.....	Below standard. Alcohol declared. 86 per cent; adulterated.
4782	8785	Dave Philips.....	Coldwater.....	9.40	14%	
4781	8784	J. M. Grasham.....	Englewood.....	9.00	.....	Below standard.
4783	8786	James A. Murray.....	Coldwater.....	9.48	.....	Passed.
4786	8789	Chas. Johnson.....	Newton.....	8.56	.....	Alcohol declared. 86 per cent; below standard.

* Spirit of camphor should contain 10 grams of camphor in each 100 cc. and no added water.

ELIXIR OF IRON, QUININE AND STRYCHNINE PHOSPHATE.*

Lab. No.	Insp. No.	NAME.	City.	Specific gravity	Color.	Residue, gms.	Alkaloids.
4687	8719	Arensberg & Cullen.	Goodland.....	1.0810	Light greenish..	8.270	0.384
4842	8872	Chas. E. Bartlett....	Columbus.....	1.0831	" "	4.292	300
4845	8880	T. B. Campbell.....	Galena.....	1.0886	Light brownish..	23.184	416
4846	8881	C. C. Moore Drug Co.	".....	1.0866	Light greenish..	4.328	378
4790	8798	Demain-Powell Pharmacy	Macksville.....	1.0859	" "	4.446	442
4792	8812	Bunch Drug Co.....	Beloit.....	1.0788	Dark brown.....	20.060	874
4797	8817	U. S. Quisenberry...	Cawker City...	1.0664	Light green.....	19.184	848
4800	8820	City Pharmacy (E. L. Ebnother)	Downs.....	1.0792	Nearly normal..	19.700	754
4802	8822	Baldwin & Co.....	Osborne.....	1.1575	Brownish.....	27.538	356
4808	8823	H. B. Leach & Son...	Alton.....	1.0846	Yellowish.....	22.696	862
4818	8886	E. A. Isenberg.....	Collyer.....	1.0858	Light greenish..	4.886	286
4823	8848	Mission Drug Co.....	Salina.....	1.0869	" "	21.980	348

* Specific gravity should be about 1.0876; color, light yellowish-green; residue, 21.6 gms. in 100 cc.; alkaloids, 0.898 gm. in 100 cc.

TINCTURE OF IODINE.*

Lab. No.	Insp. No.	NAME.	City.	Gms. iodine.	Gms. potas. iodide.	Remarks.
4785	8788	John Reese.....	Newton.....	5.62	4.55	Below standard.
4789	8792	A. & A. Drug Co.....	Garden City...	7.89	5.68	Above standard.

* Should contain 92.5 per cent alcohol, 6.86 gms. of iodine and 4.85 gms. potassium iodide in 100 cc.

SOAP LINIMENT.*

Lab. No.	Insp. No.	NAME.	City.	Specific gravity.	Gms. camphor.	Gms. soap.	Remarks.
4812	8832	M. I. Smith.....	Miltonvale.....	0.8926	3.65	5.72	Not clear.
4814	8834	J. P. Wormeringer...	Sharon Springs..	0.9054	1.82	.....
4833	8863	Crowell's Pharmacy..	Pittsburg.....	0.9310	2.58	5.10	
4868	8903	Sunflower Pharmacy..	Independence...	0.8933	4.50	5.35	
4870	8905	Santa Fe Drug Store.	".....	0.8906	5.16	5.97	
4900	8926	James L. Carter.....	Emporia.....	0.8908	4.50	5.89	Passed.
4835	8938	Tom Mason.....	Fulton.....	0.9062	1.29	5.13	Below standard in camphor content.
4889	8941	C. H. Selig.....	El Dorado.....	.....	.....	.....	Broken in transit.

* Specific gravity should be from 0.8748 to 0.8862; camphor, 4.5 gms. in 100 cc.; soap, from 5.5 to 6 gms. in 100 cc.

TINCTURE OF CAPSICUM.*

Lab. No.	Insp. No.	NAME.	City.	Per cent alcohol.	Remarks.
4804	8824	G. R. Thomason	Stockton.....	84	Passed.
4881	8851	Palmer Opera House Pharmacy	Salina.....	87.5	
4875	8910	Kingsbury & Frick	Oswego.....	82.5	Passed.

* Alcohol should be about 87 per cent.

TINCTURE OF SANGUINARIA.*

Lab. No.	Insp. No.	NAME.	City.	Gms. extractive in 100 cc.	Per cent alcohol.	Remarks.
4825	8844	C. F. Dawson	Russell.....	1.49	54.0	
4882	8842	F. W. Aah	Pittsburg.....	3.49	54.5	
4891	8917	Scarlett's Palace Drug Store,	Yates Center ...	1.48	59.5	
4916	8860	Freeman Bros	Parsons.....	1.888	45.9	Below standard.
4946	8948	C. H. Selig	El Dorado.....	1.56	56.25	Below standard in extractive.
4964	8965	Orient Drug Co.	Wichita.....	1.165	67.5	Below standard.
4967½	8968	Fred L. Johnson	"	2.478	48.75	

* Extractive should be about 2.5 gms. in 100 cc.; alcohol, about 56 per cent.

Lab. No. 4667, Insp. No. 2807. "Red Cross Kidney Pills." Prepared for William McGeorge, Kansas City. Juniper and potassium nitrate were detected.

Lab. No. 4756½, Insp. No. —. "Tablets" sent in by Doctor Ramey, of Protection, Kan. Found to contain digitalin.

Lab. No. 4856, Insp. No. 6891. "Elixir Bromide of Potash." Manufactured by Burrough Bros., Baltimore. Retailer, The Fred Haines Drug Company, Coffeyville. Sample contained 18.77 gms. of potassium bromide in 100 cc. of the elixir. Above standard.

Lab. No. 4679, Insp. No. 5034. "Dewitt's Kidney and Bladder Pills." E. C. Dewitt & Co., Chicago. Sample contained methylene blue, juniper, potassium nitrate, starch, and a salt of iron. Each pill contained 0.0104 gm. of iron calculated as Fe_2O_3 .

Lab. No. 4880, Insp. No. 5035. Solution. Sent in by Doctor Smith, Lawrence, Kan. Sample contained 5.42 gms. of alum in 100 cc. of the solution.

Lab. No. 4884, Insp. No. 5039. "Dyed woolen shirt" said to have caused symptoms of poisoning. Sent by Doctor Chaffee, Talmage, Kan. The dye was either diphenylamine or metanil yellow. Tests correspond more nearly to the latter. Metanil yellow is very poisonous.

Lab. No. 4886, Insp. No. 8912. "Elixir of Potassium Bromide." Burrell's Drug Store, Iola, Kan. Sample contained 14.39 gms. of potassium bromide in 100 cc. of the elixir. Below standard.

Lab. No. 4926, Insp. No. 5040. A powder sent in by Doctor

Hayes, of Seneca, Kan. Said to have had a bad effect on patient. Found to contain acetanilid, sodium bicarbonate and tartaric acid.

Lab. No. 4928, Insp. No. 5041. "Fluid Extract of *Cypripedium*." Sharp & Dohme, Baltimore, Md. Sample contained 21.28 gms. of extractive in 100 cc. of the fluid extract. One hundred grams of the crude drug were found to contain 26.112 gms. of total extractive. Passed.

Lab. No. 4954, Insp. No. 8955. "Elixir of Potassium Bromide." Archie McVicar, Wichita. Sample contained 23.28 gms. of potassium bromide in 100 cc. of the elixir. Elixir of potassium bromide should contain 17.5 gms. of potassium bromide in 100 cc. Above standard.

House Fly Catechism.

1. *Where is the house fly born?* In filth, chiefly in horse manure and outhouses.

2. *How long is the life cycle of his birth?* About ten days from the time the eggs are laid until the mature fly is born.

3. *What are the steps in the transformation from the egg to the fly?* The egg, the maggot, the pupa, the fly.

4. *Where does the fly live?* Where there is filth.

5. *Is there anything too filthy for the fly to eat?* No.

6. *Does the fly like clean food too?* Yes, and it appears to be its delight to wipe its feet on clean food.

7. *Where is its favorite place of feeding?* The manure heap, the privy-vault, and the spittoon.

8. *Where does the fly go after leaving the manure pile, the privy-vault, and the spittoon?* Into the kitchen, dining room and bedroom.

9. *What does he do in the kitchen, dining room and bedroom?* He wipes his feet on the food, bathes in the milk, and annoys the sleeper.

10. *Does the fly visit those sick with typhoid fever, consumption, smallpox and cholera infantum?* He certainly does, and may call on you next.

11. *Is the fly dangerous?* Yes, he spreads disease.

12. *How does he spread disease?* By carrying infection on his legs and wings, and by "fly specks" after he has been feeding on infectious material.

13. *What diseases may the fly thus carry?* He may convey typhoid fever, tuberculosis, cholera, dysentery and "summer complaint."

14. *Did the fly ever kill anyone?* He killed more American soldiers in the Spanish-American war than the bullets of the Spaniards; and was the direct cause of much of the typhoid fever in Kansas last year.

15. *Where are the greatest number of cases of typhoid fever and summer complaint?* Where there are the most flies.

16. *Where are the most flies?* Where there is most filth.

17. *Is the presence of flies therefore an indication of nearby filth?* It most certainly is, and that is disgraceful.

18. *Why should we "swat the fly"?* Because he is the cause of much sickness and death.

19. *How may we successfully fight the fly?* By destroying or removing his breeding place, the manure pile; making the privy-vault fly-proof, and keeping our yard clean; by screening the house, by the use of the wire swatter and sticky fly-paper.

SWAT THE FLY.

Flies.

There is just one living thing which performs not a single useful function in the scheme of the universe. It is the creature which conservative scientists do not hesitate to declare the "most dangerous animal on earth, more to be dreaded than the tiger or the cobra."

It is the common house fly, ordinarily supposed to be a scavenger, destroying destructive microbes developed in decomposing tissues, whether animal or vegetable. Instead of destroying them it distributes them and places them where they are taken into the human body, there to multiply and continue their deadly work.

Provision is made for the purchase of milk and food products, and rigid restrictions enforced to insure their purity. Yet scant check is as yet put upon the multiplication of the swift, sure, winged messengers of disease that transform the most wholesome of foods into a death potion.

For wherever there is filth there are flies, and there seems to be a devilish purpose that drives them from piles of filth to the dining tables of man, there to deposit the deadly germs they have gathered together.

Every enlightened city spends thousands of dollars for sewers. Yet, permitting the house fly to have access to the sewage, either in garbage cans or wagons or at the sewer outlets or upon the shores of the water course in which the offal is deposited, defeats the very purpose for which the thousands are expended.

Modern knowledge has taught to all the priceless value of pure water. Where it cannot be obtained otherwise, wisdom demands the establishment of costly filtration plants.

But there are three causes, not one, for the 350,000 cases of typhoid fever in the United States every year, more than ten per cent of which prove fatal. The fever is spread through three routes—water, milk and flies. Water is probably responsible for the greater number of cases, but last year's investigations in New York city showed that there were 650 deaths from typhoid and 7000 deaths from other intestinal diseases that were traceable directly to diseases spread through the agency of flies.

And other diseases, the spread of which is due largely to the same insect enemy of man, are Asiatic cholera, dysentery and tuberculosis.

The latest belief of science is that it is not the heat alone that causes the awful summer mortality among infants and children. It is the fly, and the criminal carelessness of man in failing to prevent the fly's birth.

In considering the fly, it must be greatly differentiated from the mosquito. The mosquito is deadly dangerous because it not only carries disease but breeds disease-bearing germs. The bacilli of malaria and of yellow fever are bred in the body of the mosquito, and it injects them into the punctures it cuts into the skins of men.

The fly does not breed the parasites of disease in its body, but it is still the more dangerous pest. The fly's mode of inoculation is generally by depositing the germs it carries both inside and on the surface of its body upon the food that man eats.

Bred in filth of barnyards and city dumps, the house fly lives up to its greatest possibilities as a disseminator of filth and disease. Every fly is estimated to possess 12,000 very minute foot hairs that exude a slimy fluid. On these hairy legs it can carry 100,000 bacteria that it hastens to deposit upon the food of some family.

The bacteria may live for two weeks, and so can be carried long distances on the fly's legs; or, as they are indigestible, they can be carried in the alimentary canal of the fly and spread the contagion many miles from the original source.

For example, a house fly will carry and distribute mechanically the tuberculosis bacillus in its most virulent form. The house fly will eat these bacilli in enormous numbers, but it will not digest them. They will pass through its intestinal tract and emerge as fully alive, as virulent, as deadly as before.

Therefore we do not speak in any spirit of exaggeration when we say that there should be striving to cleanse every home of flies as if each of the seemingly innocent insects were a scorpion. For twelve generations of descendants, each a poison bearer, is the season's progeny of every female fly.

SWAT THE FLY!

Effect of Blue Color Upon Flies.

Marre and Fe observed that cow stables, the walls of which had been painted blue, were evidently avoided by the common house fly. It is therefore recommended, in order to keep the flies away from the stables, to paint the walls once or twice yearly with chlorinated lime solution to which some ultramarine blue has been added—10 pounds of lime and 500 grams ultramarine blue in 100 liters of water.—*Pacific Druggist*.

If the blue color scheme is effective against flies, why not paint our kitchens blue?—[Editor.]

Why We Fear the Fly.

Flies are looked upon in general as simply an annoyance. The cleanly housewife endeavors to keep them out of the dwelling, but the men folks frequently fail to sympathize in the effort, and leave the doors and screens open.

It has been learned now that the presence of the fly is not simply an annoyance but a real menace to the home, because he brings infection from a distance. This fact has long been suspected, but has recently been proved.

It has been noticed by Doctor Hayward, bacteriologist, and other observers, that the flies flocked in numbers about the cuspidor of those suffering from pulmonary tuberculosis. A fly speck is a trivial thing apparently, but careful examination proved that the "specks" from these flies were full of tubercular bacilli. As a consequence of their presence, the bacilli of this horrid disease were scattered everywhere.

Flies imprisoned and fed on tubercular sputum died in two or three days after the infectious material was introduced. Other flies likewise confined and fed on milk lived from eight to ten days. The "specks" or feces of these flies were rubbed up with sterile water and injected into guinea pigs, and the pigs developed genuine cases of consumption.

These facts indicate the importance of suppressing the ordinary house fly. The use of screens, of fly poisons, and especially the cleaning up of all sources of infection where flies congregate, are among the practical measures for getting rid of this danger.—*The Healthy Home.*

A Letter.

The following letter is self-explanatory and is published in justice to Mr. Elder.

OTTAWA, KAN., April 11, 1911.

Dr. S. J. Crumbine, Secretary State Board of Health, Topeka:

MY DEAR SIR—I notice in the BULLETIN for March considerable prominence given to this statement: "The Christian Scientist in the Legislature opposed all Medical Legislation." I do not think that you wish purposely to make a mistake. I believe that I was the only member of the Christian Science Church or Society who was a member of the legislature, and for my part you will find that I supported the bill establishing tuberculosis hospital, hospital for criminal insane; I wrote and introduced a bill for cure and care of drug users and inebriates, I voted for a bill for collecting vital statistics, also for a stenographer for Doctor Dykes; I was in favor of liberal maintenance of a medical school at Rosedale. The only laws that I opposed along medical lines were the ones providing for medical examination for school children, and the raising a license for medicine peddlers and new building for the University Medical School, and in each of these cases I was asked to do as I did by many reputable physicians.

I only wish to add that my first interest in Christian Science commenced when I had tried everything that was offered to me along medical lines and had given up all hope of ever being well again when I was recommended to a Christian Science practitioner and was practically healed in one week; but this has brought no animosity towards the medical profession and my acts in the legislature were not governed by any feeling other than that of kindness. One of my next door neighbors is an allopathy physician and a man whose friendship I very highly prize and he fully approved my acts in the legislature along medical lines.

Personally I do not care anything about this matter but I do not wish the religious organization which I believe is doing a great work charged with something that is not true, and I therefore hope in the next BULLETIN you will kindly correct the statement made. With kind personal regards, I am, yours truly,

[Signed] A. P. ELDER.

In a subsequent letter he admits his opposition to the anti-tuberculosis educational campaign of the State Board of Health, and it is noticed in this letter that he opposed the medical inspection of schools bill, and the new hospital for the K. U. Medical School. Mr. Elder was a hard working member and deserves great credit for his efforts in behalf of the unfortunate drug and liquor inebriates.

THE FLY.

(With apologies to Theodore Tilton's "The Fly.")

Baby bye,
Here's a fly!
Let us watch him, you and I.
See him swoop
In a loop,
Almost tumbling in the soup.

There he goes
With his toes
Dancing on your grandma's nose;
Now, my dear,
See him veer
To your darling papa's ear.

See his feet—
They are neat,
And his footsteps are so fleet!
His feet hold,
So we're told,
Microbes in each tiny fold.

You would squirm
At each term
That is given to each germ—
One might speak
For a week
In rich Latin and in Greek,

And not tell
Very well—
No, nor even could he spell
All the things
The fly brings
On his feet and head and wings.

Germs of grippe,
Pains that nip,
Pangs that hold each finger tip;
Dandruff mites,
Typhoid sprites,
And appendicitis bites—
All of these
With great ease
Does he carry, if you please.
Spry and quick,
Sly and slick—
With all them he's never sick!

—*Exchanges.*

BULLETIN

OF THE

Kansas State Board of Health.

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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DEACON, Statistician.

No. 5.

MAY, 1911.

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Keep the milk clean, covered and cool.

“From filth and flies to food and fever.”

It spreads—the Boy Scouts movement against the Typhoid Fly.

Every fifty seconds a life is lost from a preventable disease in
America.

The annual meeting of the State Board of Health is called for
Monday, June 12.

“The lure of the red light and the promise of the red press are
but decoys of the “Red Plague.”—*Snow*.

The Turk and the mosquito have practically destroyed Greece,
and perhaps the mosquito has been the most destructive.

“The time will come when we will quarantine against the Red
plague, as against the White, the Black and the Yellow.”—*Jordan*.

With an up-to-date incinerating plant, the proper collection of
garbage and city waste, the making of every outside toilet fly-proof,
it is possible to have a practically flyless city.

It is said that 15 per cent of the shell eggs of commerce are
what is known as “checks” or “cracks.” Will we save them by
breaking them out and freezing them, or will we throw them away?

VITAL STATISTICS

Reported to the Kansas Board of Health for April, 1911.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths...	Cases...	Deaths...	Cases...	Deaths...	Cases...	Deaths...	Cases...	Deaths...	Cases...	Deaths...
The State... totals, April, 1910.....	245 280	72 70	20 57	2 13	37 95	4 7	316 329	11 13	244 148	0 1	1854 1840	6 23
Allen	1	1	0	0	1	0	1	0	1	0	0	0
Anderson	0	0	0	0	0	0	0	0	1	0	1	0
Atchison	0	0	0	0	0	0	0	0	0	0	1	0
Barber	0	0	0	0	0	0	0	0	0	0	0	0
Barton	0	0	0	0	1	0	12	2	1	0	0	0
Bourbon	3	2	0	0	0	0	0	0	0	0	0	0
Brown	3	3	0	0	1	0	0	0	5	0	0	0
Butler	1	0	1	0	1	0	9	0	0	0	2	0
Chase	0	0	0	0	0	0	0	0	1	0	3	0
Chautauqua.....	0	0	0	0	0	0	0	0	0	0	0	0
Cherokee.....	4	4	0	0	1	0	2	0	6	0	0	0
Cheyenne.....	0	0	2	0	0	0	1	0	0	0	0	0
Clark	0	0	0	0	0	0	0	0	0	0	0	0
Clay	0	0	0	0	0	0	0	0	0	0	0	0
Cloud	0	0	0	0	0	0	0	0	8	0	72	0
Coffey	1	1	0	0	0	0	20	0	0	0	3	0
Comanche.....	1	0	0	0	0	0	0	0	0	0	0	0
Cowley	5	5	0	0	1	1	0	0	0	0	20	1
Crawford.....	2	2	1	0	0	0	0	0	0	0	0	0
Decatur.....	0	0	0	0	0	0	0	0	0	0	1	0
Dickinson.....	0	0	0	0	0	0	4	0	7	0	0	0
Doniphan.....	3	3	0	0	0	0	0	0	2	0	1	0
Douglas.....	2	0	0	0	0	0	31	0	1	0	4	0
Edwards.....	0	0	0	0	0	0	11	0	0	0	27	0
Elk	0	0	0	0	0	0	2	0	6	0	3	0
Ellis	0	0	0	0	0	0	0	0	0	0	0	0
Ellsworth.....	0	0	0	0	0	0	6	0	0	0	4	0
Finney.....	3	1	0	0	0	0	0	0	5	0	0	0
Ford	1	1	0	0	0	0	14	1	1	0	1	0
Franklin.....	1	1	0	0	0	0	0	0	33	0	0	0
Geary.....	0	0	0	0	0	0	0	0	0	0	4	0
Gove	0	0	0	0	0	0	0	0	0	0	75	0
Graham.....	0	0	0	0	0	0	0	0	0	0	0	0
Grant	0	0	0	0	0	0	0	0	0	0	0	0
Gray	0	0	0	0	0	0	3	0	0	0	0	0
Greeley.....	0	0	0	0	0	0	5	0	0	0	2	0
Greenwood.....	1	0	0	0	1	0	8	0	5	0	10	0
Hamilton.....	0	0	0	0	0	0	0	0	0	0	0	0
Harper.....	1	0	0	0	0	0	0	0	0	0	0	0
Harvey.....	0	0	0	0	0	0	4	0	1	0	20	0
Haskell.....	1	0	0	0	0	0	0	0	0	0	0	0
Hodgeman.....	1	0	0	0	0	0	0	0	0	0	2	0
Jackson.....	0	0	0	0	0	0	0	0	1	0	40	1
Jefferson.....	0	0	0	0	0	0	2	0	19	0	0	0
Jewell.....	0	0	0	0	0	0	0	0	0	0	12	0
Johnson.....	0	0	0	0	2	1	2	0	1	0	5	0
Kearny.....	0	0	0	0	0	0	0	0	1	0	2	0
Kingman.....	1	0	0	0	2	0	2	0	1	0	2	0
Kiowa.....	0	0	0	0	0	0	1	0	0	0	1	0
Labette.....	1	0	2	0	0	0	0	0	0	0	0	0
Lane	0	0	0	0	0	0	0	0	3	0	0	0
Leavenworth.....	1	0	0	0	0	0	0	0	1	0	9	0
Lincoln.....	1	0	0	0	0	0	2	1	0	0	3	0
Linn	0	0	0	0	0	0	1	0	0	0	4	0
Logan.....	0	0	0	0	0	0	0	0	0	0	57	1
Lyon	0	0	0	0	0	0	5	0	0	0	19	0
Marion.....	1	0	0	0	0	0	0	0	0	0	4	0
Marshall.....	0	0	0	0	0	0	2	0	1	0	60	0
McPherson.....	0	0	0	0	0	0	1	0	2	0	22	0

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
Meade.....	0	0	0	0	0	0	13	1	0	0	0	0
Miami.....	2	0	0	0	0	0	0	0	0	0	0	0
Mitchell.....	0	0	0	0	0	0	0	0	0	0	16	0
Montgomery.....	1	0	2	1	0	0	0	0	0	0	38	0
Morris.....	0	0	1	0	0	0	0	0	2	0	5	0
Morton.....	0	0	0	0	3	0	0	0	0	0	0	0
Nemaha.....	0	0	0	0	0	0	0	0	0	0	0	0
Nessho.....	0	0	0	0	0	0	0	0	0	0	87	0
Ness.....	1	1	0	0	1	0	0	0	0	0	6	2
Norton.....	0	0	0	0	0	0	0	0	0	0	0	0
Osage.....	1	1	0	0	3	0	0	0	0	0	85	0
Osborne.....	1	1	0	0	2	0	0	0	0	0	174	0
Ottawa.....	1	1	0	0	0	0	5	0	0	0	1	0
Pawnee.....	1	0	0	0	0	0	1	0	0	0	0	0
* Phillips.....	0	0	0	0	0	0	0	0	0	0	0	0
Pottawatomie.....	0	0	0	0	0	0	0	0	1	0	82	0
Pratt.....	1	1	0	0	0	0	0	0	0	0	300	0
Rawlins.....	0	0	0	0	0	0	1	0	0	0	0	0
Renov.....	1	1	0	0	0	0	7	0	4	0	16	0
Republic.....	1	3	0	0	0	0	2	0	0	0	28	0
Rice.....	0	0	0	0	0	0	0	0	3	0	2	0
Rice.....	0	0	0	0	0	0	0	0	0	0	0	0
Rice.....	0	0	0	0	0	0	15	0	14	0	109	0
Rooks.....	0	0	0	0	0	0	0	0	0	0	10	0
Rush.....	1	0	0	0	0	0	3	2	0	0	0	0
Russell.....	0	0	0	0	0	0	0	0	0	0	12	0
Saline.....	1	1	0	0	0	0	1	0	16	0	24	0
Scott.....	0	0	0	0	0	0	0	0	0	0	0	0
Scott.....	0	2	0	0	0	0	0	0	0	0	0	0
Scott.....	2	2	0	0	0	0	0	0	0	0	0	0
Scott.....	0	0	0	0	0	0	2	0	0	0	0	0
Shawnee.....	1	0	0	0	0	0	1	0	1	0	2	0
Sheridan.....	0	0	0	0	0	0	5	1	0	0	10	0
Sherman.....	0	0	0	0	0	0	0	0	0	0	0	0
Smith.....	0	0	0	0	2	0	5	0	0	0	0	0
Stafford.....	1	1	0	0	0	0	0	0	0	0	1	1
* Stanton.....	0	0	0	0	0	0	12	0	0	0	0	0
Stevens.....	0	0	0	0	0	0	0	0	0	0	6	0
Sumner.....	0	0	0	0	0	0	4	1	0	0	26	0
Thomas.....	0	0	0	0	0	0	0	0	0	0	13	0
Thomas.....	0	0	0	0	0	0	0	0	0	0	25	0
Trego.....	1	1	0	0	0	0	0	0	0	0	0	0
* Wabasha.....	0	0	0	0	0	0	0	0	0	0	0	0
Wallace.....	0	0	1	0	0	0	1	0	0	0	9	0
Washington.....	1	1	0	0	0	0	2	0	0	0	0	0
Washington.....	1	1	0	0	0	0	0	0	0	0	0	0
Wichita.....	3	3	0	0	0	0	3	0	11	0	89	0
Wichita.....	1	1	0	0	0	0	5	2	0	0	125	0
Wilson.....	1	1	0	0	0	0	1	0	0	0	0	0
Woodson.....	0	0	0	0	2	0	1	0	1	0	8	0
Wyandotte.....	0	0	0	0	1	0	0	0	0	0	0	0
Cities:												
Atchison.....	1	0	0	0	0	0	6	0	0	0	0	0
Coffeyville.....	0	0	2	0	1	0	0	0	4	0	0	0
Fort Scott.....	0	0	0	0	2	0	0	0	0	0	2	0
Kansas City.....	6	16	7	1	4	2	19	0	18	0	52	1
Leavenworth.....	4	4	0	0	3	0	1	0	12	0	1	0
Parsons.....	0	0	0	0	0	0	3	0	0	0	0	0
Parsons.....	1	1	0	0	1	0	0	0	1	0	0	0
Pittsburg.....	0	0	0	0	1	0	0	0	10	0	44	0
Topeka.....	3	3	0	0	0	0	5	0	11	0	89	0
Wichita.....	3	3	0	0	0	0	5	0	11	0	89	0
State Institutions.	168	2	0	0	0	0	0	0	0	0	0	0

* No report.

The honest dealer has a good conscience, a treasure the price of which, like that of the virtuous woman, is above rubies. The longer he lives the better a friend this conscience becomes and the more cheerful its communications to his spirit.—*Pennsylvania Bulletin.*

First Annual Summer School for Health Officers and Physicians.

By mutual arrangement between the State Board of Health and the Board of Regents of the University, the first annual Summer School for health officers and physicians of Kansas will be opened in the medical department at the University in Lawrence on Monday, June 12. It is believed that a new epoch will be inaugurated at this time in the training of physicians in public health work on the one hand and in increasing the usefulness to physicians of the University school of medicine on the other.

It is understood at the outset that this school is open free to every licensed physician of the state, and the hope is expressed that many will take advantage of this opportunity to receive instruction in the bacteriological laboratories of the University, which will be of interest and benefit regardless as to whether or not they are or ever expect to be health officers.

The average physician is a hard-working man, and few of them take a vacation annually as they should do. This opportunity is presented to those who feel they cannot take the time for an extended vacation to spend a few days in a most interesting and instructive recreation.

The beauties of Mount Oread, on which are located the University buildings, the panorama of landscape views which opens before the vision as one stands upon the top of the hill have been a revelation to every one who has first visited this splendid institution. There is no more beautiful and interesting place in the entire state than the far-famed Mount Oread.

Every county health officer, and every health officer of the cities of the first class, is expected to attend this school of instruction. It may not be amiss to say that the next legislature will be asked to pass a bill which will require that after a stated time in the future only those who hold certificates of attendance at the school for health officers shall be eligible for appointment as health officers.

The State Association of Health Officers will have their annual meeting during this week, as announced in the program.

The following program for the week's school is here presented:

**PROGRAM OF SUMMER SCHOOL FOR HEALTH OFFICERS
AND PHYSICIANS.**

Monday, June 12, 1911.

- 2-4 P. M.—REGISTRATION OF HEALTH OFFICERS AND PHYSICIANS.
Fraser Hall, University of Kansas, Lawrence.
- 4:30 P. M.—ANNUAL MEETING OF STATE BOARD OF HEALTH AND COUNTY
AND MUNICIPAL HEALTH OFFICERS.
- 8 P. M.—FORMAL OPENING SUMMER SCHOOL FOR HEALTH OFFICERS.
By the Chancellor, Dr. Frank Strong.
Address by Dr. Mervin T. Sudler, Dean University School of Medi-
cine. "The Relation of the School of Medicine to Public Health
Work."

Tuesday, June 13, 1911.

- 9-11 A. M.—BACTERIOLOGY.
Dr. W. K. Trimble, director.
Conference. "Microbes."
Demonstrations:
Culture Media—preparation, clarification, filtration, sterilization,
neutralization, etc.
Bouillon.
Gelatine—Special Media.
Agar.
Morphology—microscopic specimens; cocci, bacilli, spirilli, etc., cap-
sules, spores, flagella, etc.
- 11-12 A. M.—CHEMISTRY OF WATER EXAMINATIONS.
Professor E. H. S. Bailey, director.
The Therapeutic Action of Mineral Waters.
Conference: "Nature's Nitrogen Cycle." Determination of Nitrogen
as "Albuminoid" and "Free" ammonia.
- 1:30-2:30 P. M.—PUBLIC HEALTH LECTURE.
Clay E. Coburn, M. D., president State Board of Health. "Prevent-
ative Medicine."
- 2:30-5 P. M.—LABORATORY EXERCISES.
Each student performing himself the matter of the morning's confer-
ence and aided by the entire laboratory staff. (Optional.)
- 5 P. M.—PUBLIC HEALTH LECTURE.
J. J. Sippy, M. D., secretary State Association of Public Health Offi-
cers. "The Health Officer's Duty to Secure the Prompt and
Implicit Obedience of Every Member of His Community to the
Provisions of the Public Health Laws."
- 8 P. M.—PUBLIC HEALTH LECTURE, ILLUSTRATED.
Clarence E. McClung, M. D., Ph. D., professor of zoölogy. "He-
redity."

Wednesday, June 14, 1911.

- 9-11 A. M.—BACTERIOLOGY.
Professor F. H. Billings, director.
Conference: "Microbic Properties and Products."
Demonstration:
Cultures; use of loop, straight wire, etc.
Inoculation; stab, slant, streak.
Growth; aerobic and anaerobic—gas or acid made, etc.
Colonies; selection, identification methods, etc.
Isolation of a specific germ from mixed growths.

11-12 A. M.—CHEMISTRY OF WATER EXAMINATIONS.

Professor E. H. S. Bailey, director.

Conference: The chemical sanitary examination of potable waters.

Demonstrations: Professor C. C. Young.

Determination of nitrites, nitrates, chlorine and oxygen consumption.

1:30-2:30 P. M.—PUBLIC HEALTH LECTURE.

S. J. Crumbine, M. D., secretary State Board of Health. "Prompt and Efficient Quarantine. How to Establish and How to Release from a Quarantine."

2:30-5 P. M.—LABORATORY EXERCISES.

Each student performing himself the matter of the morning's conference and aided by the entire laboratory staff. (Optional.)

5 P. M.—PUBLIC HEALTH LECTURE.

W. J. V. Deacon, statistician State Board of Health. "Public Health Laws."

8 P. M.—PUBLIC HEALTH LECTURE, ILLUSTRATED.

S. J. Crumbine, M. D., secretary State Board of Health. "The Pittsburg Survey." A study of the sanitary, social, and industrial conditions of the world's greatest industrial center.

Thursday, June 15, 1911.

9-11 A. M.—BACTERIOLOGY.

Professor W. K. Trimble, director.

Conference: "Pathogenic Functions of Microbes and Factors which Influence their Action."

Demonstrations:

Special methods of determination and diagnosis used in bacteriology.

Hanging drop, motility, clumping, Widal test, Pfeiffer's reaction, idol test, fermentation studies.

11-12 A. M.—BACTERIOLOGY OF WATER AND MILK EXAMINATIONS.

Professor F. H. Billings, director.

Conference: "The Role of Bacteria in Water and Milk." "Determination of Bacterial Counts in Water and Milk."

Totals at 20 and at 37 degrees.

Acid counts at 37 degrees.

Identification of fecal organisms.

1:30-2:30 P. M.—PUBLIC HEALTH LECTURE.

Professor Wm. C. Hoad, C. E., sanitary engineer State Board of Health. "The Safe Disposal of Excreta and Wastes."

2:30-5 P. M.—CONFERENCE ON DRUG ADULTERATION.

Professors Sayre, Havenhill, and Watson. Laboratory demonstrations and lecture upon adulterated, sophisticated and deteriorated drugs and pharmaceuticals.

5 P. M.—PUBLIC HEALTH LECTURE.

W. J. V. Deacon, statistician State Board of Health. "Importance and Utilization of Vital Statistics in Modern Civilization."

8 P. M.—ANNUAL MEETING OF THE KANSAS ASSOCIATION OF PUBLIC HEALTH OFFICERS.

Friday, June 16, 1911.

9-11 A. M.—BACTERIOLOGY.

Professor W. K. Trimble, director.

Conference. "Classification of Microbes; Variability of Form and Function; A Typical Bacteria."

Demonstrations: Stains—utilization for identification and for differentiation, double-staining polychromes. Specific stains for diagnoses. Specific stains for spores, capsules, flagella, etc.

11-12 A. M.—CHEMISTRY OF WATER EXAMINATIONS:

Professor E. H. S. Bailey, director.

Demonstration: Professor C. C. Young. "The Quality of Some City Water Supplies of Kansas."

1:30-2:30 P. M.—PUBLIC HEALTH LECTURE.

Professor F. O. Marvin, dean school of engineering. "The Creation and Safeguard of a Pure Water Supply."

2:30-5 P. M.—CONFERENCE ON FOOD ADULTERATION.

Professors Bailey and Jackson, food analysts for the State Board of Health.

Demonstration in food laboratories of food adulteration and sophistication.

5 P. M.—PUBLIC HEALTH LECTURE.

S. J. Crumbine, M. D., secretary State Board of Health. "Queries and Answers on Public Health Laws, Rules and Regulations, and the General Duties of the Public Health Official." Quiz.

8 P. M.—PUBLIC HEALTH LECTURE, ILLUSTRATED.

Professor Samuel J. Hunter, professor of entomology. "Insect Carriers of Disease."

Saturday, June 17, 1911.

9-11 A. M.—BACTERIOLOGY.

Professor W. K. Trimble, director.

Conference: "Vaccination, Serotherapy Immunization, Bacterial Vaccines."

Dr. Vernor Nisbet, director of American Biological Company.

Demonstrations:

Cultures for toxin products, extraction of toxins.

Preparation and use of killed cultures.

Preparations and use of filtered toxins.

Preparation and use of antitoxin sera.

Preparation and use of precipitated antitoxins.

Laboratories open for the completion of individual work throughout the day.

There are 511 anti-tuberculosis associations, 421 sanatoria and hospitals, 342 dispensaries and 68 open-air schools engaged in the White Plague crusade in America.

On April 1 there were 1500 different agencies at work in the anti-tuberculosis crusade in the United States and Canada, an increase of nearly 700 per cent in the last seven years.

One of the greatest contributing causes for the downfall of the Roman Empire was the malaria of the Campagna introduced by the Asiatic and African slaves taken by the Romans. Swat the mosquito!

Attention Physicians! Your attention is invited to the announcements of the Summer School for Physicians and Health Officers and the free distribution of antitoxins, serums and vaccines, found in this issue of the BULLETIN.

Preliminary Report on the Neosho and Verdigris Rivers in Relation to Municipal Water Supply.

In table 1 there is given a list of the cities of Kansas supplied with surface water, together with their populations according to the assessor's census of 1910, and a statement of the sources from which the several supplies are derived. The list is so arranged that the cities upon the three principal water-supply streams of the state—the Missouri, the Neosho and the Verdigris rivers—are segregated, the total population for each river being given.

It may be readily seen from this tabulation that, excepting the Missouri, the Neosho and Verdigris are the most useful and most used streams in Kansas as sources of public water supply. Excluding the four cities supplied with water from the Missouri river—a stream over whose pollution the state of Kansas has no control—there are 38 cities, with an aggregate population of 141,000, using water from streams and impounding reservoirs. Nineteen of these cities, with a combined population of 101,000, are located on the drainage areas of the Neosho and Verdigris rivers. In other words, 72 per cent of the population supplied with surface water over whose pollution the state of Kansas has adequate control is confined to the drainage areas of two streams covering only 11 per cent of the area of the state.

TABLE 1.—CITIES IN KANSAS SUPPLIED WITH SURFACE WATER.

<i>City.</i>	<i>Source of supply.</i>	<i>Population.</i>	
Kansas City....	Missouri river.....	91,300	
Leavenworth ¹ ..	Missouri river.....	24,342	
Atchison.....	Missouri river.....	16,691	
Rosedale.....	Missouri river.....	5,495	
Total from Missouri river.....		137,828	
Parsons.....	Labette creek and Neosho river.....	14,490	
Emporia.....	Neosho river.....	9,291	
Iola ²	Neosho river.....	9,271	
Chanute.....	Neosho river.....	8,898	
Oswego.....	Neosho river.....	2,653	
Council Grove...	Neosho river.....	2,612	
Humboldt.....	Neosho river.....	2,609	
Yates Center...	Impounding reservoir.....	2,223	
Marion.....	Mud creek.....	2,133	
Burlington.....	Neosho river.....	2,088	
La Harpe.....	Elm creek.....	2,006	
Petrolia.....	Neosho river.....	187	
Total from Neosho river and tributaries.....		58,461	
Coffeyville.....	Verdigris river.....	18,174	
Independence...	Verdigris river.....	12,372	
Cherryvale ³	Verdigris river..	5,925	
Fredonia.....	Fall river.....	3,118	
Neodesha.....	Fall river.....	2,283	
Le Hunt ⁴	Elk river.....	300	
Grabham ⁴	Verdigris river.....	150	
Total from Verdigris river and tributaries.....		42,322	

City.	Source of supply.	Population.
Fort Scott.....	Marathon river.....	11,556
Winfield.....	Walnut river.....	7,475
Ottawa.....	Marias des Cygnes river.....	7,430
Galena.....	Shoal creek.....	5,732
Caney.....	Caney river.....	4,691
Horton.....	Impounding reservoir.....	4,317
Paola.....	Bull creek.....	3,885
Osawatomie.....	Marias des Cygnes river.....	3,076
Olathe.....	Impounding reservoir.....	3,039
Osage City.....	Impounding reservoir.....	2,417
Garnett.....	Impounding reservoir.....	2,068
Pleasanton.....	Impounding reservoir.....	1,918
Russell.....	Impounding reservoir.....	1,820
Medicine Lodge,	Medicine Lodge river.....	1,847
Sedan.....	Caney river.....	1,249
Baldwin.....	Impounding reservoir.....	1,211
Valley Falls.....	Delaware river.....	1,008
Empire ⁵	Shoal creek.....	962
Cedar Vale.....	Caney river.....	940
Peru.....	Caney river.....	558
Total, miscellaneous sources.....		39,810
Total, all sources.....		278,421

1 Population given does not include Fort Leavenworth.

2 Including Gas City.

4 Population for 1908.

3 New supply.

5 Population for 1908.

It is interesting in this connection to note that the greater number of our larger rivers are not used at all as sources of water supply. Among these are the Kaw, the Republican, the Blue, the Solomon, the Saline, the Smoky Hill, the Arkansas, the Little Arkansas, the Ninnescah, the Chikaskia, the Cimarron, and Spring River.

Again, excluding the Missouri river towns, the following are the cities having a surface water supply that is continuously contaminated with city sewage at some point above the waterworks intake: Winfield, Caney, Osawatomie, Valley Falls, Burlington, Humboldt, Oswego, Neodesha, Fredonia, Cherryvale (new supply), Iola, Petrolia, Chanute, Parsons (in dry weather), Grabham, Independence and Coffeyville. Of these the four first-named, with a combined population of 16,000, are located on various streams, and have at most one city on the drainage area above them contributing sewage to the stream; while the remaining thirteen, with a population of 52,000, are on either the Neosho or the Verdigris river, or on Fall river, a branch of the Verdigris, and most of them have from two to eight cities contributing sewage to the stream above their waterworks intake. Moreover, it is in the section of the state covered by these two streams that manufacturing industries have been developed to the greatest extent, with the result that the streams of the area are receiving a large and constantly increasing amount of industrial wastes of various kinds.

The question may properly be asked whether such an extensive use of the Neosho and Verdigris river as sources of municipal water supply is necessary. To this it may be replied that in the case of nearly every city using these streams the question of a ground-water supply has been raised at one time or another and the local situation has been investigated with more or less thoroughness, and that the present source of supply has been accepted only after the available ground water has been shown to be undesirable in character or inadequate in amount. Exceptions to this statement are the cities of Chanute, where a seemingly adequate ground-water supply has been found and is about to be developed, and Emporia, where an excellent supply of ground water has been partially obtained and is now awaiting further development. On the other hand, it seems certain that several small cities now supplied from limited ground-water sources will presently be forced to turn to the rivers or to extensive impounding reservoirs for the water with which to supply their growing needs.

The facts just stated make it manifest that it is of greater importance to conserve the waters of the Neosho and Verdigris rivers for purposes of public water supply than to conserve for the same purpose the waters of any other streams over which the state of Kansas has any degree of control. For some time the conviction has been growing that the problem of the proper sanitation of these two drainage areas is coming to be of commanding importance and of very great difficulty as well, and that it is already insistently demanding solution. In order to provide the proper basis for a fair, just and adequate solution of this problem, your engineering department during the past six months has been collecting and verifying data and studying the various phases of the situation. Certain of the more significant of these data are summarized in the succeeding pages.

PHYSICAL CHARACTERISTICS OF THE STREAM.

In figure 1 is exhibited a map of the drainage areas of the two rivers, on a scale of eight miles to the inch. This map has been made up from various reliable sources and is believed to be accurate. It shows the complete drainage system of each river; the county and township boundaries; all cities within the limits of the map which have public water supplies; and all cities and towns within the drainage areas of the two rivers for which a separate enumeration is given in the assessors' reports.

The Neosho river has its headwaters in Morris county, over the greater part of which its branches spread out like a fan. It flows

in a southeasterly direction through Lyon county, passing about two miles north of Emporia. A few miles east of Emporia it is joined by the Cottonwood, a much larger stream coming in from the west. The situation here is analogous to that at the confluence of the Mississippi and Missouri, where the smaller branch retains the name of the trunk stream and the larger and more important branch is regarded as a tributary. The drainage area of the Cottonwood above its confluence with the Neosho is 1925 square miles, while the area above the same point drained by the Neosho is only 790 square miles.

From its junction with the Cottonwood the Neosho flows first in a southeasterly direction through Coffey and a portion of Woodson and Allen counties, to a point near Iola. From here its general direction is a little east of south until it passes out of the state just below Chetopa. From the state line it continues in a southerly direction to a junction with the Arkansas at Fort Gibson, about four miles north of Muskogee. In Oklahoma it is called Grand river. The total area within the state of Kansas drained by the Neosho is 5671 square miles.

The Verdigris river is also formed by the confluence of two principal branches, the eastern branch being the smallest and retaining the name of the main stream, the western, or larger, branch being known as Fall river. These two branches come together just below Neodesha, this city being situated in the fork between the two branches, very much as Emporia is situated with respect to the two branches of the Neosho.

Above Neodesha the drainage area of the Verdigris is 865 square miles, lying in the northern part of Greenwood and Wilson counties and the southwestern part of Woodson county. Fall river drains an area of 932 square miles, covering, roughly, the southern part of Greenwood and Wilson counties.

From Neodesha the main stream flows nearly due south in a tortuous course until it crosses the state line just south of Coffeyville. Two miles north of Independence it is joined by another important tributary, Elk river, which has a drainage area of 680 square miles. The area in Kansas drained by the Verdigris and its branches is 3480 square miles.

Below the state line the river pursues a southeasterly course to its confluence with the Arkansas near Fort Gibson, at a point only a few hundred yards above the mouth of Grand river.

The average discharge of the Neosho river at the gauging station maintained at Iola by the United States Geological Survey is about

1800 cubic feet per second, or 0.5 cubic foot per second per square mile of drainage area. The maximum or flood discharge is given as 75,000 cubic feet per second, or 20 cubic feet per second per square mile, or 42 times the average. The minimum flow is about 40 cubic feet per second, which is equal to 0.011 cubic foot per second per square mile, or to $\frac{1}{5}$ of the average discharge. Some of the records indicate a minimum considerably lower than this, but there seems to be reason for doubting their accuracy.

The average discharge of the Verdigris at Independence is approximately 1500 cubic feet per second, or 0.5 cubic foot per second per square mile of drainage area. The maximum is given as 50,000 cubic feet per second, which is at the rate of 16 cubic feet per second per square mile, or 33 times the average. The ordinary minimum flow is in the neighborhood of 10 cubic feet per second, which is equal to 0.003 cubic foot per second per square mile of drainage area, or $\frac{1}{33}$ of the average. During the record-breaking dry season of the past year the flow at Independence fell for a short time to about one-half the ordinary minimum. This was stated by many people familiar with the regimen of the stream to be lower than it had been for a generation.

QUALITATIVE CHARACTERISTICS OF THE WATER.

The principal chemical characteristics of the water of the Cottonwood river at Emporia, the Neosho river at Emporia, and the Neosho at Oswego are indicated in table No. 2, while the corresponding data relating to Fall river at Neodesha and the Verdigris at Coffeyville are given in table 4. These tables are made up from the analyses made at the University of Kansas for the State Board of Health of daily samples collected during the year 1907 by the United States Geological Survey. The quantities given in the tables represent the ordinary flow of the stream, when the quality of the water is not appreciably affected by floods. The proportion of the year represented by these figures varies from 53 to 78 per cent. The various mineral constituents are expressed in the unit ordinarily employed in the water laboratory, of "parts per million."

In tables 3 and 5 are given the hypothetical combinations of the ionic constituents shown in tables 2 and 4 respectively. In these tables the various substances are calculated in terms of "grains per gallon" and "pounds per million gallons," the former being the laboratory unit and the latter being given because of its greater usefulness for certain water-supply purposes.

TABLE 2.—Mineral constituents of waters of Neosho river at ordinary low-water stage.
(Parts per million.)

CONSTITUENTS.	Cottonwood river at Emporia.	Neosho river at Emporia.	Neosho river at Oswego.
Turbidity.....	45.	37.	42.
Solids in suspension.....	38.	26.	29.
Solids in solution.....	480.	270.	320.
Silica (SiO ₂).....	21.	20.	18.
Iron (Fe).....	0.7	1.0	0.4
Calcium (Ca).....	110.	70.	75.
Magnesium (Mg).....	27.	13.	18.
Hydrocarbonates (HCO ₃).....	320.	270.	250.
Sulphates (SO ₄).....	150.	27.	75.
Chlorine (Cl).....	12.	7.	11.
Nitrates (NO ₃).....	2.7	2.6	1.6

TABLE 3.—Hypothetical combinations of mineral constituents of Neosho river.
(Grains per gallon and pounds per million gallons.)

COMBINED CONSTITUENTS.	Cottonwood river at Emporia.		Neosho river at Emporia.		Neosho river at Oswego.	
	Grains per gallon.	Pounds per million gallons.	Grains per gallon.	Pounds per million gallons.	Grains per gallon.	Pounds per million gallons.
Silica (SiO ₂).....	1.23	175	1.17	167	1.05	150
Iron oxide (FeO ₂).....	0.06	8	0.08	12	0.04	5
Sodium chloride (NaCl)...	1.16	165	0.74	106	1.06	166
Sodium nitrate (NaNO ₃)...	0.22	31	0.21	30	0.13	18
Calcium sulphate (CaSO ₄)...	12.44	1777	2.24	320	6.22	888
Calcium carb. (CaCO ₃).....	6.86	980	8.62	1231	6.43	918
Magnesium carb. (MgCO ₃)..	5.47	781	2.62	376	3.64	520
Totals.....	27.44	3917	15.69	2242	18.57	2665

TABLE 4.—Mineral constituents of waters of Verdigris river at ordinary low-water stage.
(Parts per million.)

CONSTITUENTS.	Fall river at Neodesha.	Verdigris river at Coffeyville.
Turbidity.....	21.	40.
Solids in suspension.....	23.	42.
Solids in solution.....	290.	300.
Silica (SiO ₂).....	23.	27.
Iron (Fe).....	0.3	0.5
Calcium (Ca).....	70.	75.
Magnesium (Mg).....	18.	14.
Hydrocarbonates (HCO ₃).....	280.	260.
Sulphates (SO ₄).....	31.	29.
Chlorine (Cl).....	15.	26.
Nitrates (NO ₃).....	1.7	1.9

TABLE 5.—Hypothetical combinations of mineral constituents of Verdigris river.
(Grains per gallon, and pounds per million gallons.)

COMBINED CONSTITUENTS.	Fall river at Neodesha.		Verdigris river at Coffeyville.	
	Grains per gallon.	Pounds per million gallons.	Grains per gallon.	Pounds per million gallons.
Silica (SiO ₂).....	1.34	192	1.58	225
Iron oxide (FeO ₃).....	0.03	4	0.04	6
Sodium chloride (NaCl).....	1.41	206	2.51	358
Sodium nitrate (NaNO ₃).....	0.13	19	0.15	22
Calcium sulphate (CaSO ₄).....	2.57	367	2.41	344
Calcium carbonate (CaCO ₃).....	8.34	1,192	9.20	1,314
Magnesium carbonate (MgCO ₃).....	3.64	521	2.83	405
Totals.....	17.49	2,501	18.72	2,674

From an inspection of these tables it is possible to make several broad generalizations the truth of which is attested by practical experience. The waters of both streams are entirely suitable for purposes of municipal water supply. While not as soft as could be desired, they are much softer than most of the surface waters of the state. The total solids of both streams are practically the same, as are also the iron, calcium, magnesium and hydrocarbonates. The iron content is within a satisfactory limit, and the experience of the cities using the water indicates that it rarely or never becomes objectionable. The chlorine and silica are considerably greater in the Verdigris than in the Neosho, though neither are in amounts sufficient to be objectionable.

The most important difference between the two rivers shown in these tables is in the sulphates, of which the quantity in the Neosho is about 2.5 times that in the Verdigris. It should be noted that the excess of sulphates comes from the numerous sulphate springs of Marion and Chase counties, which largely make up the low-water flow of the Cottonwood. The Neosho above Emporia carries about the same proportion of sulphates as does Fall river and the Verdigris. With all this, however, the Neosho is capable of furnishing a very satisfactory water supply. This is borne out by a report on the water-supply situation at Muskogee, Okla., recently made by a widely known New York engineer. This engineer investigated several other possible sources of supply, but strongly recommended the retention of the present supply from Grand river and the enlargement of the facilities for securing it. He stated that largely because of the comparative softness and the general acceptability of its water the Grand river was worth at least \$150,000 to the city of Muskogee.

An important fact in relation to the waters of the two rivers is that they part with their burden of silt and clay rather easily, and that they can be readily purified. This is not disclosed by the tables under discussion, but is a fact attested by observation and experience.

WATER SUPPLIES OF CITIES UPON DRAINAGE AREAS.

In tables 6 and 7 are exhibited certain data regarding the present water supplies of the cities upon the drainage areas of the Neosho and Verdigris rivers, respectively. These tables show the cities upon the drainage area having public water supplies; the population of these cities according to the assessor's census of 1910; the population at present actually served by the supply; the ownership of the waterworks plant; the source of supply; and the average daily consumption for all purposes, this being analyzed into the three main divisions of house, public and industrial uses. At the bottom of the tables certain general summaries are shown.

One of the noteworthy facts shown by these tables is the relatively small population on each drainage area that has been able to secure a supply of ground water. In the case of the Neosho area the proportion is 15 per cent, while in the case of the Verdigris it is only 5 per cent.

POPULATIONS UPON DRAINAGE AREAS.

The observation has been made by many investigators that aside from the sewage from cities and the wastes from manufacturing industries, the mere settling up of the drainage area of a stream and the occupation and use of the land for the ordinary purposes of agriculture will inevitably result in the pollution in a certain degree of the waters of the stream. This fact is now so well established as to permit of little controversy. Further, the degree of the pollution from this source is roughly proportional to the rural population per square mile upon the drainage area of the stream. While this form of pollution rarely or never makes the water of the stream offensive to the senses, it is not considered safe to use such water for domestic purposes without first purifying it by means of filtration or its equivalent.

The sewage from cities, however, and the liquid wastes discharged into the stream from the various industrial establishments upon its drainage area are by far the most important polluting materials. Fortunately, they are also the most easily controlled, as ordinarily they can be collected before reaching the stream and retained until partially or wholly purified.

TABLE 6. — Statistics of water supplies of cities on the drainage area of Neosho river.

CITY.	Popu- lation.	Popu- lation using supply.	Ownership of waterworks plant.	Source of supply.	Average water consumption in gallons, per day.			
					For house purposes.	For public purposes.	For industrial purposes.	For all purposes.
Marion.....	2,183	1,200	City.....	Mud creek.....	190,000	10,000	100,000	300,000
Peabody.....	1,628	800	City.....	Shallow wells.....	60,000	.....	.....	60,000
Florence.....	1,229	500	Company.....	Shallow well.....	20,000	.....	.....	20,000
Cottonwood Falls.....	919	500	City.....	Springs.....	10,000	5,000	125,000	15,000
Council Grove.....	2,612	1,250	Company.....	Neosho river.....	70,000	5,000	485,000	200,000
Emporia.....	9,291	9,000	City.....	Neosho river.....	700,000	15,000	.....	2,200,000
Burlington.....	2,008	1,500	City.....	Neosho river.....	50,000	5,000	5,000	60,000
Iola.....	9,271	7,500	City.....	Neosho river.....	300,000	50,000	450,000	800,000
La Harpe.....	2,006	1,000	City.....	Elm creek.....	35,000	.....	40,000	75,000
Humboldt.....	2,609	875	City.....	Neosho river.....	95,000	5,000	50,000	150,000
Yates Center.....	2,223	200	Company.....	Impounding reservoir.....	20,000	.....	150,000	170,000
Petrolia.....	187	187	Company.....	Neosho river.....	50,000	.....	4,270,000	4,320,000
Chanute.....	8,888	7,000	City.....	Neosho river.....	600,000	100,000	500,000	1,200,000
Erle.....	1,291	.....	City.....	Shallow wells.....	.....	.....	.....	.....
Oswego.....	2,653	1,500	City.....	Neosho river.....	150,000	25,000	125,000	300,000
Cherokee.....	1,645	1,500	City.....	Deep wells.....	45,000	.....	15,000	60,000
Mineral.....	1,513	1,200	City.....	Deep wells.....	80,000	.....	10,000	40,000
Parsons.....	14,480	11,000	Company.....	Labette creek and Neosho river.....	950,000	40,000	1,000,000	2,000,000
Chetopa.....	1,851	1,400	City.....	Deep wells.....	70,000	.....	10,000	80,000
Total.....	44,744	34,325	.....	Neosho river.....	2,495,000	225,000	6,510,000	9,230,000
Total.....	13,607	7,900	.....	Other surface water sources.....	725,000	30,000	790,000	1,545,000
Total.....	10,076	5,900	.....	Ground water sources.....	285,000	5,000	85,000	275,000
Grand total.....	68,427	49,125	.....	All sources.....	3,455,000	260,000	7,385,000	11,050,000

TABLE 7.—Statistics of water supplies of cities on the drainage area of Verdigris river.

CITY.	Popu- lation.	Popu- lation using supply.	Ownership of waterworks plant.	Source of supply.	Average water consumption in gallons per day.			
					For house purposes.	For public purposes.	For industrial purposes.	For all purposes.
Eureka.....	2,224	1,600	City.....	Shallow wells.....	90,000	5,000	25,000	120,000
Fredonia.....	2,113	2,760	City.....	Fall river.....	273,000	12,000	86,000	371,000
Neodesha.....	2,233	1,600	City.....	Fall river.....	300,000	23,000	460,000	800,000
Cherryvale.....	5,323	2,000	City.....	Verdigris river.....	175,000	25,000	100,000	300,000
La Hunt.....	860	800	Company.....	Elk river.....	10,000	.....	2,750,000	3,000,000
Independence.....	12,972	9,500	City.....	Verdigris river.....	1,250,000	20,000	700,000	2,000,000
Grabbam.....	10,160	100	Company.....	Verdigris river.....	5,000	.....	205,000	210,000
Coffeyville.....	18,000	10,000	City.....	Verdigris river.....	1,880,000	20,000	600,000	2,500,000
Total.....	42,022	25,850	.....	Verdigris and Fall river.....	8,408,000	97,000	2,140,000	5,640,000
Total.....	2,970	300	.....	Other surface water sources.....	10,000	.....	2,920,000	3,000,000
Total.....	2,224	1,600	.....	Ground water sources.....	90,000	5,000	25,000	120,000
Grand total.....	44,566	27,750	.....	All sources.....	3,508,000	102,000	5,155,000	8,760,000

Table 8 exhibits certain data in relation to the distribution of the population upon the drainage area of the Neosho, and table 9 the corresponding data for the Verdigris river. These tables show, by counties, the drainage area and the rural and urban populations residing thereon. The urban population is subdivided into that portion which is connected to a system of sewers and that portion not so connected, the latter consisting of the various unsewered towns and villages and unsewered portions of cities having sewers.

TABLE 8.—Statistics of area and population of the Neosho river.

COUNTY.	Drainage area within county.	Population upon drainage area.		
		Rural population.	Urban population.	
			Not connected to sewers.	Connected to sewers.
Morris.....	534	6,174	3,601	
Wabaunsee.....	73	682		
McPherson.....	19	259		
Harvey.....	21	270		
Marion.....	325	12,441	6,994	900
Butler.....	25	144		
Chase.....	748	5,098	2,013	
Greenwood.....	24	170		
Lyon.....	587	10,335	2,250	3,500
Coffey.....	513	8,439	3,545	
Anderson.....	106	1,590	458	
Woodson.....	252	3,632	2,794	
Allen.....	402	8,494	7,821	3,300
Wilson.....	32	586		
Neosho.....	583	10,168	6,233	6,000
Bourbon.....	13	151		
Crawford.....	301	5,988	4,604	
Labette.....	391	8,623	18,423	3,060
Cherokee.....	372	11,214	3,734	
Totals.....	5,671	94,495	57,470	32,250
Per square mile.....		17	10	6

TABLE 9.—Statistics of area and population of the Verdigris river.

COUNTY.	Drainage area within county.	Populations upon drainage area.		
		Rural population.	Urban population.	
			Not connected to sewers.	Connected to sewers.
Chase.....	53	387		
Lyon.....	82	1,040		
Butler.....	82	687		
Greenwood.....	1,131	11,294	3,254	1,000
Woodson.....	188	2,381	754	
Elk.....	552	5,574	2,599	
Wilson.....	534	10,603	6,059	2,100
Chautauqua.....	32	261		
Montgomery.....	566	14,461	19,314	18,830
Neosho.....	44	768		
Labette.....	216	4,237	1,172	
Totals.....	3,480	51,598	33,152	21,900
Per square mile.....		15	10	6

TABLE 10.—Statistics of sewage disposal of cities on the drainage area of Neosho river.

City.	Part of city sewered.	Population connected to sewers.	Average daily sewage flow, gallons.	Character of purification plant.	Stream into which effluent is discharged.	Drainage area above sewer outlet, square miles.	Distance from sewer outlet to next waterworks intake, miles.
Peabody..	All.	800	50,000	Septic tanks	Doyle creek.	66	168
Marion.	All.	800	900,000	Septic tanks	Cottonwood river.	335	149
Emporia.	Nearly all.	8,500	900,000	None.	Cottonwood river.	1,859	58
Burlington.	All.	8,800	1,200,000	Septic tanks	Neosho river.	2,997	42
Iola.	All.	8,800	1,200,000	Septic tanks	Elm creek	58	9
Humboldt.	All.	160	144,000	Septic tanks	Neosho river.	3,964	6
Yates Center	All.	160	144,000	Septic tanks and sand filter	Branch of Owl creek.	2	57
Petrolia.	All.	6,000	750,000	None.	Neosho river.	4,211	6
Chanute.	All.	800	46,000	Septic tanks	Neosho river.	4,279	58
Eric.	All.	800	46,000	Septic tanks and contact filter	Neosho river.	4,892	25
Oswego.	All.	3,300	750,000	Septic tanks and contact filter	Neosho river.	1	82
Parsons.	East side.	4,200	1,000,000	None.	Branch of Labette creek.	82	84
Parsons.	West side	4,200	1,000,000	Septic tanks.	Labette creek.	42	82
Parsons.	North side	4,200	1,000,000	Septic tanks.	Little Labette creek.	42	82
					Labette creek.	80	85
Totals.		16,980	2,544,000	No purification.			
Totals.		14,000	2,260,000	Purification by septic tanks alone.			
Totals.		800	46,000	Purification by septic tanks and sand or contact filters.			
Grand total		31,290	4,840,000	All systems.			

TABLE II.—Statistics of sewage disposal of cities on drainage area of Verdigris river.

City.	Part of city sewered.	Population connected to sewers.	Average daily sewage flow, gallons.	Character of purification plant.	Stream into which effluent is discharged.	Drainage area above sewer outlet, square miles.	Distance from sewer outlet to next waterworks intake, miles.
Eureka.	All.	1,000	120,000	Septic tanks.	Fall river.	332	52
Frederia.	All.	1,100	72,000	None.	Salt creek.	3	25
Neodesha.	North side.	300	100,000	None.	Verdigris river.	869	22
Neodesha.	East side.	100	28,000	None.	Verdigris river.	862	20
Neodesha.	South side.	600	240,000	None.	Verdigris river.	863	20
Independence.	North side.	875	83,000	None.	Verdigris river.	2,903	24
Independence.	East side.	860	86,000	None.	Verdigris river.	2,904	24
Independence.	South side.	7,000	1,000,000	None.	Rock creek.	14	36
Independence.	West side.	1,350	140,000	Septic tanks and contact filters.	Rock creek.	11	33
Grabham.	All.	150	10,000	Septic tank.	Branch of Rock creek.	1	43
Cherryvale.	All.	1,600	180,000	Septic tanks and contact filters.	Drum creek.	81	39
Coffeyville.	East side.	6,000	860,000	Septic tanks.	Verdigris river.	3,868	30
Coffeyville.	South side.	2,000	360,000	Septic tanks.	Verdigris river.	3,869	30
Coffeyville.	Suburb.	25	2,000	Septic tank.	Union creek.	180	10
Totals.		9,695	1,546,000	No purification.			
Totals.		9,125	1,546,000	Purification by septic tanks alone.			
Totals.		2,860	320,000	Purification by septic tanks and contact filters.			
Grand totals.		21,980	3,410,000	All systems.			

1. Distance to state line.

At the bottom of each table the totals for the entire drainage area are given, together with the average populations per square mile of drainage area. The results show a total population of 33 per square mile on the Neosho drainage area and of 31 on that of the Verdigris. It is worthy of note that the several divisions of the population per square mile, as well as the total populations, are nearly equal on the two drainage areas.

SEWERAGE OF CITIES UPON DRAINAGE AREAS.

Data regarding the sewerage system of the several cities upon the drainage areas of the two rivers are presented in tables 10 and 11. This tabulation shows the population connected with the sewers, the average daily sewage flow, the nature of the purification process employed, the stream into which the sewage or the effluent of the disposal plant is directly discharged, the drainage area of this stream above the sewer outlet, and the distance by the stream from the sewer outlet to the next waterworks intake.

These tables exhibit the situation as it is just at present. It should be noted that several recently constructed sewerage systems are included to which as yet only a relatively small population is connected. These are the systems at Peabody, Marion, Burlington, Humboldt, Erie and Oswego. In addition, plans have been approved for a comprehensive system of sewerage for Yates Center, involving purification by means of septic tanks and sand filters, and this system also has been included in table 10.

INDUSTRIAL WASTES.

The disposition of the wastes from certain industries is rapidly coming to be an important feature of the general sanitary problem of the area under consideration, especially of its southern portion. Some of the most important industries of the region from an economic standpoint, such as the cement and brick industries, produce very little waste that is objectionable, while others, the oil industry for example, are constant sources of injury to the local streams and annoyance and irritation to those who live near them and use their waters.

While it is somewhat beyond the present purpose to enter into any detailed consideration of the industrial wastes of the area, a brief statement will be made concerning several of the more important classes of wastes from the viewpoint of public water supply.

Wastes from the Oil Industries.

There are seven oil refineries in Allen and Neosho counties on the drainage area of the Neosho river, and five refineries and one mineral rubber plant in Montgomery county on the drainage area of the Verdigris. The principal wastes from these plants consist of crude oil, unneutralized acid and acid sludge, all of which are objectionable additions to the waters of any stream. Some of the refineries have taken steps to keep these wastes upon the refinery grounds, but at the majority of the plants the efforts made to prevent their escape into the streams are only half-hearted and the means employed are inadequate and ineffective.

In addition to the wastes from the refineries, there is a considerable amount of crude oil which is carelessly allowed to escape from oil wells and oil storage plants. In certain sections the local streams are covered with oil from this source, especially for some time after a heavy rainfall.

Strawboard Wastes.

There is a large strawboard factory at Coffeyville and a similar plant at Independence, both discharging their wastes into the Verdigris river. The daily waste from the Coffeyville plant approximates 750,000 gallons, and contains the softer parts of 18 tons of straw, together with a considerable proportion of the fibrous material lost in the process of manufacture, along with about 2100 pounds of lime. The waste from this plant has at times produced a serious nuisance in the river. The Independence plant is smaller and is somewhat better situated with reference to the creation of a local nuisance.

Slaughterhouse Wastes.

Eleven slaughter and packing houses on the drainage areas of the two rivers have come under our observation and data concerning them have been collected. This is undoubtedly an incomplete list, but further information is lacking. One of these discharges its wastes into a city sewer, three discharge directly into the river, and the remaining seven discharge into creeks or small streams. Several of these have been the cause of serious complaint in the past two years.

Creamery Wastes.

There is a considerable number of creameries and a very large number of skimming stations and milk depots on the drainage area of the two streams, but it has been found difficult to obtain an accurate estimate of these, owing to the failure of many local health

officials to respond to requests for information. The more important of these are now connected to city sewers, or will presently become so connected.

PLAN FOR CONSERVATION OF RIVERS FOR WATER SUPPLY PURPOSES.

From a careful study of the whole situation, including many investigations in the field as well as laboratory analyses and tests, and covering a multitude of data not shown in this report, the conclusion seems unavoidable that both the Neosho and the Verdigris rivers are now being polluted in a manner prejudicial to the public health. It must also be apparent that the pollution of these streams and the consequent menace to health are bound to continue and to increase, unless some general plan of remedial action is put into effect. In order to be effective and equitable, such a plan should be comprehensive; and in order to avoid the imposition of financial burdens which the cities would find impossible to carry, the plan should provide for cleaning up the worst situations at once, this to be followed by the progressive improvement of other places until the entire plan shall be put into effect. Such a plan should recognize the proper and legitimate use of the natural watercourses for the purpose of ultimate drainage, but should have for its prime object the protection of the streams from unreasonable and unnecessary pollution and the conservation of their waters for the purposes of public water supply.

It is believed that such a comprehensive plan should include the items indicated in the following list:

Marion.

The city of Marion has so far been unable to secure a satisfactory supply of ground water, and is still depending upon its oldtime Mud creek supply. Although the low water flow of this creek is largely derived from springs, and although there are no sewered cities upon its drainage area, the present supply will not be satisfactory from either a physical or a sanitary point of view until provision is made for filtering it. If it were possible to develop an adequate supply of ground water of acceptable character, this would doubtless be preferable to the purification of the present Mud creek supply.

Council Grove.

An efficient settling basin and filtration plant for the purification of the Neosho river water should be built and put into operation at Council Grove.

Emporia.

Either the partially developed ground water supply of the Emporia water plant should be increased until it becomes adequate for the needs of the city, or a plant for the thorough purification of the Neosho river water should be built. Such a plant should include settling basins and a modern filtration equipment. The location of the State Normal in this city makes it of especial importance that the public water supply should be of unquestioned purity.

On account of the large and growing volume of sewage from this city, and its relation to city water supplies farther down the river, provision should be made for the construction and operation of a proper sewage purification plant.

Burlington.

The present water supply of Burlington is taken from the Neosho river, and is pumped into the mains without any treatment whatever. Plans have been prepared for an efficient purification plant, but so far the city has taken no steps looking toward their realization. The plant should be constructed and put into operation at an early date.

The Burlington sewerage system is at present approaching completion. It provides for the partial purification of the sewage in septic tanks before discharging it into the river. By the time the flow of sewage has grown to an important amount provision should be made for its supplementary purification by some suitable filtration or sterilization process, for the protection of water supplies farther down the river.

Iola.

The public water supply of Iola is taken from the Neosho river, and is put through a very thorough sedimentation process with the help of lime and iron sulphate before being pumped into the mains. This process alone cannot be relied upon for complete protection against sewage contamination, however, and some additional safeguard should be thrown about the use of this supply. The sterilization of the water, in addition to its clarification, is now being tried out by the city officials, with the hope that this simple and inexpensive expedient may be sufficient to put the supply on a good sanitary basis. If this proves to be inadequate or unsatisfactory as a permanent method of treatment, a modern filtration plant should be installed.

The septic tank plant of the city sewerage system was badly designed in the first place, and is now long since outgrown. The re-

sults obtained from it, consequently, are far from satisfactory. It should be remodeled and greatly enlarged in order that it may properly perform its functions, or a new plant should be built. In addition to this, provision should be made for the supplementary purification of the sewage for the benefit of the public water supplies located farther down the Neosho river.

Humboldt.

The present water supply of the city of Humboldt is taken from the Neosho river and is pumped directly through a set of pressure filters into the mains. There are no settling basins for the preliminary clarification of the water, and no opportunity is afforded for the coagulation of the alum before it reaches the filters. The type of filter is one that has been demonstrated to be but little better than a sand strainer, and that is now practically obsolete. If the present source of supply is to be retained adequate settling basins should be built and the filter plant should be put on a good operating basis.

The plans for the new sewerage system of Humboldt contemplate the partial purification of the sewage by septic tank action. It was the understanding at the time the plans were approved that some provision for more complete purification would be made after the volume of sewage had grown to a considerable amount, or whenever a general plan for the cleaning up of the river should be put into effect. This agreement should be carried into execution as soon as the circumstances demand it.

Petrolia.

This small industrial village is supplied with water by the Kansas Natural Gas Company. The water is taken from the Neosho river and is pumped into the mains without purification. Either the supply should be filtered or a supply of ground water sufficient for the domestic uses of the town should be secured.

The number of people connected with the sewers is small, though the volume of sewage is large owing to the waste water from the pumping plant. On account of the nearness of the sewer outlet to the intake of the Chanute waterworks, the domestic sewage from the town should be purified before being discharged into the river.

Chanute.

The present water supply of Chanute is taken from the Neosho river and is pumped into the mains after an inadequate and ineffective sedimentation process in small settling basins. Fortunately, an apparently sufficient supply of excellent ground water

has been found near the present pumping plant, and plans for its development and utilization have been begun. Unless these plans are realized the city should prepare to purify the present Neosho river supply by sedimentation in well designed settling basins, with the help of a chemical coagulant, and filtration.

Provisions should be made at an early date for the purification of the city's sewage before permitting it to flow into the river.

Erie.

The sewerage system of Erie is just beginning its operation. It includes a septic tank plant for the removal of the gross solids from the sewage previous to its discharge into the river. Here, as at Humboldt, the future need for more complete purification of the sewage has been recognized from the start. This more complete purification should be provided for as soon as the quantity of sewage has grown to a respectable volume.

Parsons.

The sewage from practically the entire city of Parsons is discharged into the creeks near town in such a manner as to create a public nuisance of important magnitude and to constitute a serious menace to health. The sewage disposal problem here is one of great difficulty, but one which ought to be met and solved in a thorough-going and permanent manner. Plans are now under way for a comprehensive disposal scheme, involving the removal of the sewage to a point a mile below the limits of the city and its purification at that point. These plans should be pushed forward vigorously until their realization is assured.

Oswego.

The water supply of Oswego is taken from the Neosho and is strained through a pressure filter of an obsolete and ineffective type. The results are far from satisfactory. Filter equipments of this kind, while of some value for certain eastern waters, are entirely unable to produce satisfactory results with waters like those of our Kansas streams. The purification plant of this city should be remodeled to include an adequate settling basin and a more efficient filter equipment.

Eureka.

The sewage of Eureka is partially purified by the septic tank process. In view of the use of the water of Fall river farther down for public water supplies, a plan for more thorough purification of the sewage should be put into effect in the not far distant future.

Fredonia.

The water supply of the city of Fredonia is taken from Fall river and is clarified with the help of a chemical coagulant in a large masonry reservoir. This reservoir, while an excellent place for the storage of the river water, is not very well designed for use as a settling basin, and the degree of purification effected by it is very variable and consequently unsatisfactory. A filter plant should be added as an additional safeguard against the increasing pollution of the source of supply.

The sewage of the city is as yet small in amount, and is given a partial purification in a septic tank plant. Before the sewage grows to any considerable volume provision should be made for additional purification.

Neodesha.

The entire volume of sewage from the city of Neodesha is discharged into the Verdigris river without any purification whatever. On account of the use of the water of the river by Cherryvale, Independence and Coffeyville, only a short distance below, this sewage should be thoroughly purified.

Cherryvale.

The new water supply of Cherryvale will be taken from the Verdigris river at a point just west of the city. The plans for this new supply should include settling basins and a thoroughly modern and efficient filter plant.

Independence.

The water purification plant at Independence was built a number of years ago and for a long time has been badly overworked. This plant should be remodeled and enlarged and put into efficient operating condition.

The sewage from the larger part of the city is still discharged into Rock creek and the Verdigris river without any purification whatever. Adequate provision should be made at an early date for the thorough purification of all sewage not tributary to the west side disposal plant.

Coffeyville.

It is a matter of regret that after a most thoroughgoing search for ground water the city of Coffeyville has been unable to find a supply sufficient for its needs. The city supply is derived from the Verdigris river at some distance above the city, and is pumped directly to a small masonry reservoir on the hilltop near by, from which it flows by gravity to the city. This reservoir is not de-

signed as a settling basin, its principal value being its usefulness as a storage reservoir. Plans should be drawn up and put into execution as soon as practicable for the thorough purification of the supply by clarification in settling basins and filtration on filters of modern type.

The sewage of the city is partially purified in septic tanks before being discharged into the Verdigris. The septic tank of the south side sewer system has long been outgrown and now has very little value. Not only should this tank be rebuilt, but eventually the entire sewage from the city should be more thoroughly purified.

Industrial Wastes.

In the lower portions of the valleys of the two rivers under consideration are a number of refineries and other manufacturing establishments from which wastes of harmful character escape into the streams. Steps should be taken to provide for the proper disposition of such of these wastes as may be shown to be either directly or indirectly prejudicial to the public health.

Antitoxins and Serums.

The free distribution of diphtheritic antitoxin for the indigent of the state, which was inaugurated over a year ago, has proven to be eminently successful. An estimate of the number of lives that have been saved, based on the usual mortality rates where the diphtheritic antitoxin has been used as compared with cases where it has not been used, would give the result that in the first year the lives of 102 Kansas children have been saved.

The State Department of Health has decided to continue this work, and takes pleasure in announcing that other serums, antitoxins and bacterins have been added to their stock for distribution from their office, under the following conditions:

Antimeningitis serum, which has been prepared according to the method worked out in the Rockefeller Institute under Flexner, to be sent to any physician in the state upon request, to be used in indigent cases. This serum is administered by lumbar puncture, and a representative of this department will be sent to administer the serum in such cases where the attending physician so desires. It is understood, of course, that this serum is curative only in meningitis caused by the specific germ of the epidemic form of cerebro-spinal meningitis.

Tetanus antitoxin will be sent to any physician of the state upon request, to be used in indigent cases only. The department has in stock immunizing packages that will be sent out where there is reason to suspect that a certain case of injury might result in tetanus. This is particularly to be recommended in the injuries incident to the Fourth of July celebration.

In the treatment of tetanus large and frequently repeated injections of antitoxin is necessary, so that orders should clearly state whether the antitoxin is desired for immunizing purposes or for curative purposes.

The department has laid in a stock of typho-bacterin, or so-called typhoid vaccine, each package of which contains four syringes of typho-bacterin. Syringe A contains 250 million killed bacteria; syringe B contains 500 million killed bacteria; syringe C contains 1 billion killed bacteria; syringe D contains 2 billion killed bacteria. Typho-bacterin is used both for immunizing and therapeutic purposes. For immunizing purposes 500 million killed bacteria is injected, followed by a dose of 1 billion ten days later. Therapeutic dose is recommended to be from 50 to 250 million progressively increased. Typho-bacterin will be furnished to any physician in the state upon request, on the following conditions: That it is to be immediately used for either immunizing or therapeutic purposes, and second that a full and complete history and report of its use and the results obtained be furnished the department.

Immunizing packages of scarlatina bacterin, or so-called scarlet fever vaccine, as put up by the H. K. Mulford Company, has also been stocked. Each package contains three syringes: No. 1 contains 250 million killed streptococci; No. 2 contains 500 million killed streptococci; and No. 3 contains 750 million killed streptococci. These streptococci have been obtained from scarlet fever patients. The dosage as recommended is as follows: The contents of syringe No. 1 (250 millions) should be injected subcutaneously, to be followed ten days later by the injection of the contents of syringe No. 2 (500 million), and after another interval of ten days by the injection of the contents of syringe No. 3 (750 million). Scarlet fever bacterin will be sent to any physician of the state upon request under the same conditions as noted for typhoid bacterin.

The department is also pleased to announce that preparations are under way for the anti-rabic treatment of indigent cases at the Bell Memorial Hospital at Rosedale, the pasteur treatment being supplied free by the State Board of Health and a nominal charge, covering actual cost of the care of the patient, being made, which is to be paid by the county from which the patient comes, as provided for in Senate bill No. 411, Laws of 1911. It is thought that the department of health will be ready to supply this treatment and the hospital at Rosedale be ready to receive patients for anti-rabic treatment by the first of September.

State Water Survey, No. 10.

By E. H. S. BAILLY, Ph. D., director. C. C. YOUNG, A. B., analyst.

LAWRENCE, May 5, 1911.

SIR: We have to report to you the following analyses made in our laboratory since the date of our last report. The report is made in three divisions: The analysis of city supplies; proposed city supplies; and miscellaneous supplies. The analyses of city supplies herewith reported is the first section of a *report upon all the city supplies in the state of Kansas*. We hope in our next report to the Board of Health to incorporate analyses of water of all public supplies not given below. We wish to thank waterworks superintendents and city clerks who cooperated with the water survey in securing samples for analyses.

SANITARY ANALYSES OF CITY SUPPLIES—Continued.

Number	City.	Dates, 1911	Nitrogen in free NH ₃	Nitrogen in albuminoid NH ₃	Nitrogen in NO ₂	Nitrogen in NO ₃	Chlorine.....	Solids.....	Sulfates (SO ₄)..	Iron.....	Oxygen consumed.....
280	Larned.....	3-9	0.074	0.096	None.	None.	61.0	1411	277.0	0.7	1.32
281	Logan.....	4-17	0.560	0.210	None.	0.006	10.0	469	56.2	1.0	3.60
282	Minneapolis.....	3-19	0.088	0.212	1.5	0.002	36.0	408	56.7	0.5	0.24
283	McPherson.....	2-13	0.110	0.1	None.	None.	84.0	402	16.4	None.	None.
284	Manhattan.....	1-28	0.440	0.160	0.1	0.020	22.0	561	52.0	8.0	1.50
285	Marion.....	.....	0.062	0.028	0.3	0.001	21.0	964	390.5	Trace.	8.84
286	Moundridge.....	4-15	0.090	0.094	None.	None.	180.0	3426	2113.0	0.7	1.50
287	Meade.....	.....	0.014	0.040	0.7	None.	6.0	221	20.4	None.	0.18
288	Newton.....	.....	0.018	0.096	2.0	None.	13.5	388	.....	Trace.	None.
289	Norton.....	3-16	0.076	0.270	None.	None.	58.0	551	49.1	0.3	3.72
290	Neodesha.....	2-13	0.062	0.192	None.	None.	42.0	374	37.5	0.3	.....
291	Ottawa: a Tap water..... b River water.....	2-1 2-13	0.188 0.072	0.076 0.076	None. None.	None. None.	26.0 48.0	433 480	49.8 45.4	0.3 2.0	4.08 6.70
292	Osborne.....	4-14	0.800	0.194	3.5	None.	22.8	474	26.4	Trace.	0.12
293	Plainville.....	4-18	0.066	0.082	1.0	None.	17.0	317	13.9	0.3	0.60
294	F Pratt.....	3-15	0.022	0.208	0.5	0.001	88.0	871	27.5	0.8	None.
295	Pleasanton.....	9-10	0.048	0.095	1.0	0.002	2.0	127	61.5	None.	2.04
296	Peabody.....	.....	0.200	0.068	None.	None.	30.0	629	159.2	Trace.	.....
297	Parsons.....	.....	0.064	0.072	None.	None.	3.0	176	79.5	0.7	1.50
298	Pittsburg.....	2-10	0.064	0.064	None.	Trace.	94.0	538	176.7	4.0	2.84
299	Stockton.....	4-19	0.044	0.090	0.5	None.	19.0	641	51.2	0.5	0.24
300	St. Francis.....	1-27	0.086	0.060	0.7	None.	12.0	382	175.0	0.8	1.32
301	Salina.....	1-27	0.060	0.072	None.	None.	45.0	764	90.4	0.7	0.84
302	Sharon Springs.....	8-4	0.060	0.094	5.0	0.001	16.0	605	58.4	0.5	0.36
303	St. Marys.....	8-25	0.080	0.068	1.5	None.	83.0	368	.....	Trace.	1.38
304	Stafford.....	.....	0.114	0.170	2.8	0.002	95.0	618	104.8	.....	0.90
305	Topeka.....	1-26	0.180	0.132	0.5	0.010	157.0	1681	487.0	0.5	1.60
306	Wellington.....	.....	0.470	0.124	3.5	0.001	129.0	1156	476.0	0.7	3.96
307	Waverly: a Well, 185 feet..... b Well, 20 feet.....	4-4	0.096	0.168	5.0	0.001	10.0	1048	215.9	0.1	1.80
308	Wa. K. Keney.....	.....	0.014	0.048	0.4	None.	12.0	669	.....	.....	.....
309	Weir City.....	2-18	0.280	0.113	None.	0.002	10.0	238	24.0	1.0	6.30

* Too small a sample.

SANITARY ANALYSES OF PROPOSED CITY SUPPLIES.

Number	City.	Dates	Nitrogen in free NH ₃	Nitrogen in albuminoid NH ₂	Nitrogen in NO ₂	Nitrogen in NO ₃	Chlorine	Solids	Sulfates (SO ₄)	Iron	Oxygen consumed
310	Aurusta: a Carter well b Walnut river c Whitewater	4-17 4-17 4-17	0.780 0.200 0.124	0.404 0.260 0.222	Trace 0.003 0.001	2.0 0.8 None	22.0 9.0 20.0	523 280 809	53.12 4.08 32.00	0.5 0.5 0.1	0.98 5.88 6.18
311	Burdick	4-14	0.124	0.222	None	None	10.0	898	32.00	0.1	1.22
312	Coldwater	3-16	0.040	0.104	1.5	1.5	6.0	198	Trace	1.5	None
313	Landon	2-18	0.086	0.064	1.5	1.5	8.0	453	68.90	None	0.72
314	La Cygne: a Dug well b Same supply	2-6 2-13	0.100 0.080	0.158 0.123	4.0 5.5	4.0 5.5	54.0 179.0	692 874	74.40 185.10	None 0.3	3.00 0.86
315	Luray (test well)	4-12	0.080	0.123	3.5	3.5	179.0	874	185.10	0.3	1.50

* Too small a sample.
† Too high to read.

MISCELLANEOUS ANALYSES.

Number	City.	Dates	Nitrogen in free NH ₃	Nitrogen in albuminoid NH ₂	Nitrogen in NO ₂	Nitrogen in NO ₃	Chlorine	Solids	Sulfates (SO ₄)	Iron	Oxygen consumed
316	Scott City	3-10	0.028	0.104	0.1	None	92.0	3117	882.40	5.0	3.120
317	Osage City—mine water	3-9	1.34	0.244	Trace	0.07	80.0	6510	2347.00	54.6	0.276
318	Oxford	4-4	0.300	0.158	None	None	10.0	367	129.50	7.7	None
319	Mankato	4-7	0.180	0.068	5.0	None	38.0	686	129.50	7.7	None
320	Lawrence	1-20	0.022	0.046	12.0	None	206.0	1082	3.600	0.5	3.600
321	Lawrence	2-22	0.280	0.068	1.5	1.5	178.0	1008	0.840	0.5	0.840
322	Jetsmore	1-30	0.160	0.190	25.0	25.0	40.0	432	0.480	0.5	0.480
323	Hiatville	4-4	0.160	0.190	25.0	25.0	645.0	1868	41.450	0.5	41.450
324	Belle Plaine	2-21	0.160	0.190	25.0	25.0	78.0	765	2.040	0.5	2.040

* Not determined.

(Concluded next month.)

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OF THE
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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DEACON, Statistician.

No. 6.

JUNE, 1911.

VOL. VII

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Woods concludes that midwives are responsible for most cases of blindness the result of ophthalmia neonatorum in the new born.

The science of disease prevention, if properly applied, can add fifteen years to the present average length of human life.—*Prof. Irving Fisher, Yale.*

Quarantine for diphtheria should be continued until swabbings from the throat are negative. The laboratories of the State Board of Health may be used for that purpose.

ABOLITION OF THE COMMON TOWEL.

Ruling by State Board of Health.

That the use of the common roller towel in hotels, railway trains, railway stations, public and private schools is prohibited from and after September 1, 1911.

No person or corporation shall place, furnish or keep in place in any hotel, railway train, railway station, public or private school, any towel for the common public use, and no person or corporation in charge or control of any such place shall permit in such place the use of the common towel.

The term "common towel" as used herein shall be construed to mean roller towels and towels intended or available for common use by more than one person without being laundered after such use.

VITAL STATISTICS

Reported to the Kansas Board of Health for May, 1911.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
The State. totals, May, 1910.....	231 258	89 66	25 81	1 11	31 68	5 7	180 181	2 10	220 304	8 1	693 1458	4 28
Allen	4	2	0	0	1	0	0	0	7	0	1	0
Anderson	0	0	0	0	0	0	0	0	0	0	0	0
Atchison	0	0	0	0	0	0	0	0	0	0	0	0
Barber	0	0	0	0	0	0	0	0	0	0	8	0
Barton	0	0	0	0	0	0	18	0	6	0	0	0
Bourbon	0	0	0	0	0	0	0	0	0	0	0	0
Brown	0	0	0	0	0	0	0	0	0	0	0	0
Butler	1	1	2	0	1	0	9	0	0	0	1	0
Chase												
Chautauqua												
Cherokee	1	1	0	0	1	0	0	0	0	0	0	0
Cheyenne	0	0	0	0	3	3	4	0	0	0	4	0
Clark												
Clay	0	0	0	0	1	0	0	0	1	0	2	0
Cloud	0	0	0	0	0	0	0	0	1	0	0	0
Coffey	1	1	0	0	0	0	40	0	0	0	0	0
Comanche												
Cowley	1	1	0	0	0	0	0	0	0	0	0	0
Crawford												
Decatur	0	0	1	0	0	0	0	0	0	0	0	0
Dickinson	2	0	0	0	0	0	0	0	13	0	0	0
Doniphan	0	0	0	0	0	0	0	0	15	0	0	0
Douglas	5	4	1	0	0	0	16	0	1	0	5	0
Edwards	0	0	0	0	0	0	0	0	0	0	0	0
Elk	0	0	0	0	0	0	2	0	15	0	3	0
Ellis	0	0	0	0	0	0	0	0	0	0	0	0
Ellsworth	0	0	0	0	0	0	8	1	0	0	0	0
Finney												
Ford	0	0	0	0	0	0	0	0	0	0	8	0
Franklin	0	0	0	0	0	0	0	0	4	0	0	0
Geary												
Gove	0	0	0	0	0	0	0	0	0	0	6	0
Graham	0	0	0	0	0	0	0	0	1	0	0	0
Grant												
Gray												
Greeley	0	0	0	0	0	0	3	0	0	0	3	0
Greenwood	2	2	0	0	0	0	0	0	0	0	3	0
Hamilton	1	0	0	0	0	0	0	0	0	0	0	0
Harper												
Harvey	0	0	0	0	0	0	7	0	10	0	0	0
Haskell	0	0	0	0	0	0	0	0	19	0	0	0
Hodgeman	0	0	1	0	0	0	1	0	0	0	5	0
Jackson	2	2	0	0	0	0	0	0	0	0	36	0
Jefferson												
Jewell												
Johnson	0	0	1	1	0	0	0	0	4	0	0	0
Kearny	0	0	1	0	0	0	0	0	0	0	0	0
Kingman	1	1	0	0	0	0	0	0	0	0	0	0
Kiowa	0	0	0	0	0	0	3	0	0	0	1	0
Labette	2	0	0	0	0	0	2	0	0	0	0	0
Lane	1	1	0	0	0	0	0	0	0	0	0	0
Leavenworth	1	0	0	0	0	0	0	0	2	0	2	0
Lincoln	1	1	0	0	0	0	0	0	0	0	0	0
Linn	3	1	0	0	2	0	0	0	0	0	1	0
Logan												
Lyon												
Marion	0	0	0	0	0	0	1	0	3	0	5	0
Marshall	0	0	0	0	1	1	1	0	3	0	37	0
McPherson	0	0	0	0	0	0	1	0	0	0	0	0

GONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
Meade.....	0	0	2	0	0	0	0	0	0	0	1	0
Miami.....	2	0	1	0	0	0	0	0	0	0	0	0
Mitchell.....	0	0	2	0	1	1	0	0	0	0	0	0
Montgomery.....	3	2	2	0	0	0	0	0	0	0	30	0
Morris.....												
Morton.....												
Nemaha.....												
Neosho.....	0	0	0	0	0	0	0	0	0	0	12	0
Ness.....	5	1	1	0	0	0	0	0	0	0	4	0
Norton.....	2	0	0	0	0	0	0	0	0	0	0	0
Osage.....	0	0	0	0	1	0	1	1	1	3	28	0
Osborne.....												
Ottawa.....												
Pawnee.....	2	0	0	0	0	0	1	0	0	0	0	0
Phillips.....												
Pottawatomie.....	0	0	0	0	0	0	1	0	2	0	20	0
Pratt.....	1	0	0	0	0	0	0	0	0	0	20	0
Rawlins.....	0	0	0	0	0	0	0	0	0	0	0	0
Reno.....	0	0	0	0	0	0	5	0	3	0	29	0
Republic.....	1	0	0	0	0	0	0	0	1	0	5	0
Rice.....	0	0	0	0	0	0	0	0	6	0	3	0
Riley.....	0	0	0	0	0	0	12	0	5	0	31	0
Rooks.....	1	0	0	0	0	0	0	0	4	0	0	0
Rush.....												
Russell.....	0	0	0	0	0	0	1	0	0	0	0	0
Saline.....	2	0	0	0	0	0	2	0	5	0	2	0
Scott.....	0	0	0	0	0	0	0	0	0	0	0	0
Sedgwick.....	0	0	0	0	0	0	0	0	0	0	0	0
Seward.....												
Shawnee.....	1	0	0	0	1	0	0	0	1	0	1	0
Sheridan.....	0	0	0	0	0	0	0	0	0	0	0	0
Sherman.....	0	0	0	0	0	0	0	0	0	0	1	1
Smith.....	0	0	0	0	0	0	3	0	13	0	0	0
Stafford.....	0	0	0	0	0	0	0	0	0	0	0	0
Stanton.....												
Stevens.....	0	0	0	0	0	0	1	0	0	0	0	0
Sumner.....	2	0	0	0	0	0	0	0	0	0	37	0
Thomas.....	0	0	0	0	0	0	0	0	2	0	0	0
Trego.....	0	0	0	0	0	0	0	0	0	0	4	0
Wabunsee.....	1	0	3	0	0	0	0	0	0	0	3	0
Wallace.....	0	0	0	0	0	0	2	0	0	0	22	0
Washington.....	0	0	0	0	0	0	0	0	1	0	0	0
Wichita.....												
Wilson.....	0	0	0	0	0	0	0	0	0	0	3	0
Woodson.....	0	0	0	0	0	0	0	0	0	0	0	0
Wyandotte.....	0	0	0	0	0	0	0	0	6	0	0	0
Cities:												
Atchison.....	0	0	0	0	0	0	1	0	1	0	1	0
Coffeyville.....	2	2	1	0	1	0	0	0	0	0	0	0
Fort Scott.....	2	2	0	0	0	0	0	0	0	0	2	0
Kansas City.....	3	0	5	0	6	0	9	0	16	0	66	0
Leavenworth.....	2	2	1	0	4	0	1	0	0	0	2	0
Parsons.....	0	0	0	0	0	0	6	0	3	0	2	0
Pittsburg.....	1	0	0	0	2	0	0	0	1	0	4	0
Topeka.....	0	0	0	0	5	0	1	0	11	0	11	0
Wichita.....	1	4	1	0	0	0	3	0	7	0	41	0
State Institutions.	168	5	1	0	0	0	0	0	0	0	0	0

* No report.

At the present death rate from preventable causes over six million American lives will be needlessly destroyed during the next ten years.—Rittenhouse.

FOOD ANALYSES No. XXXIII.

By Prof. E. H. S. BAILY, Chemist for the State Board of Health, and Asst. Prof. H. LOUIS JACKSON, Food Analyst.

LAWRENCE, KAN., May 17, 1911.

Since making the last report considerable time has been devoted to the analysis of vinegar, and a number of samples are herein reported. Beverages, pickles, catsup, honeys, evaporated milk, and lemon extract have also been analyzed.

TABLE OF VINEGARS.

Number	Kind of vinegar	Precipitation with lead acetate	Acid, per cent.	Solids, per cent.	Total ash, per cent.	Insoluble ash, per cent.	Alkalinity of soluble ash ..	Alkalinity of insoluble ash	Remarks
5433	Cider	Good	4.82	3.34	0.42	0.06	44.88	7.32	Passed.
5434	Cider	Good	4.50	2.09	0.31	0.02	32.32	3.66	Passed.
5435	Cider	Slight	4.76	2.04	0.36	0.03	36.60	.....	Passed.
5440	Cider	Small	4.21	1.29	0.25	0.03	28.80	7.00	Illegal.
5566	Cider .....	.....	4.53	2.12	0.32	0.04	30.16	8.38	Passed.
6478	Cider .....	.....	4.55	2.62	0.32	0.04	34.80	7.72	Passed.
7718	Cider .....	.....	3.10	2.08	0.23	0.03	31.60	4.76	Illegal.*
7719	Cider .....	.....	3.25	4.37	0.39	0.04	44.80	6.60	Illegal.*
7720	Cider .....	.....	4.34	1.51	0.29	0.019	40.12	5.40	Illegal.
7738	Cider	Small	4.57	3.38	0.41	0.07	50.50	5.20	Passed.
7739	Cider	Moderate	4.73	1.29	0.25	0.01	34.52	1.20	Illegal.
7760	Cider	Fair	4.79	4.32	0.41	0.06	46.48	7.20	Passed.
7763	Cider .....	.....	3.20	1.78	0.36	0.03	43.80	6.60	Illegal.*
7764	Cider .....	.....	2.40	2.44	0.48	0.05	54.80	10.23	Illegal.*
7778	Corn sugar .....	.....	4.00	.....	.....	.....	.....	.....	Passed.
7778 A	Glucose .....	.....	6.06	.....	.....	.....	.....	.....	Passed.
7778 B	Corn sugar .....	.....	4.78	.....	.....	.....	.....	.....	Passed.
7784	Acid .....	.....	1.45	1.76	0.08	0.02	1.20	0.80	Illegal.
7900	Corn sugar .....	.....	4.60	2.42	0.42	0.05	4.52	10.80	Passed.
9851	Cider .....	.....	3.35	3.17	0.37	0.04	42.96	9.52	Illegal.*
9871	Corn sugar .....	.....	4.11	.....	.....	.....	.....	.....	Passed.
9872	Cider .....	.....	3.88	1.59	0.37	0.09	37.44	16.80	Illegal.
9873	Cider .....	.....	6.40	2.01	0.33	0.04	40.40	7.36	Passed.
9379	Distilled .....	.....	3.60	0.49	0.09	0.04	4.48	12.00	Illegal.
9830	Cider .....	.....	4.34	1.43	0.18	0.06	15.20	11.20	Illegal.
9838	Cider .....	.....	2.90	0.95	0.30	0.03	32.50	4.20	Illegal.
9830	Cider .....	.....	2.90	1.10	0.34	0.03	39.80	7.08	Illegal.
9838	Cider .....	.....	3.30	1.23	0.36	0.03	44.40	6.40	Illegal.
9400	Cane sugar .....	.....	6.00	0.82	0.17	0.06	4.60	16.00	Passed.
9401	Cane sugar .....	.....	4.50	2.03	0.24	0.13	8.40	30.00	Passed.
9408	Cider .....	.....	1.47	1.19	0.31	.....	.....	.....	Illegal.
9404	Cider .....	.....	2.36	1.23	0.33	.....	.....	.....	Illegal.
9414	Cider .....	.....	3.20	1.95	0.38	.....	.....	.....	Illegal.*
9415	Cider .....	.....	2.42	2.04	0.32	.....	37.20	5.20	Illegal.*

* Probably incompletely acidified.

ADDITIONAL DATA TO ILLEGAL VINEGARS LISTED ABOVE.

(See Table of Vinegars.)

No. 5440. Label, "Apple Cider Vinegar, Absolutely Pure. Serial No. 3898 Kan. 69." Manufacturer, Odell Cider Company, Odell, Neb. Bottler and retailer, John H. Brown & Co., Atchison, Kan. Illegal.

No. 7718. Substance, "Vinegar." Manufacturer, Hugh McDaniel, Neosho Falls, Kan. Retailer, Hugh McDaniel, Neosho Falls, Kan. Probably incompletely acidified. Illegal.

No. 7719. Substance, "Vinegar." Manufacturer, S. A. Arnold, Neosho Falls, Kan. Retailer, S. A. Arnold, Neosho Falls, Kan. Probably incompletely acidified. Illegal.

No. 7720. Substance, "Vinegar." Manufacturer, Kansas City Wholesale Grocery Co., Kansas City. Retailer, A. T. Wolford, Neosho Falls, Kan. Illegal.

No. 7739. Substance, "Vinegar." Manufacturer, Ben McCaskie, Hutchinson, Kan. Retailer, S. J. Teter, Hutchinson, Kan. Illegal.

No. 7763. Substance, "Vinegar." Manufacturer (said to be from M. E. Richardson, Sterling, Kan.) Retailer, W. B. Wersking, Sterling, Kan. Probably incompletely acidified. Illegal.

No. 7764. Substance, "Vinegar." Manufacturer (said to be from Dr. W. E. Currie. Heinz name on barrel). Retailer, J. J. Greenlee & Son, Sterling, Kan. Probably incompletely acidified. Illegal.

No. 7784. Label (barrel marked acid vinegar). Manufacturers, Drake Bros., Ness City, Kan. Retailer, Drake Bros., Ness City, Kan. Illegal.

No. 9351. Substance, "Cider Vinegar." Manufacturer, unknown (no label on barrel). Retailer, Paul F. Leñibke, Navarre, Kan. Probably incompletely acidified. Illegal.

No. 9372. Substance, "Cider Vinegar." Manufacturer, Otto Kuehne Preserving Company, Topeka, Kan. Retailer, G. F. King, Holton, Kan. Illegal.

No. 9379. Substance, "Distilled Vinegar." Manufacturer (said to have come from Monarch Vinegar Works, Kansas City). Retailer, Guth & Ohlfest, Rossville, Kan. Illegal.

No. 9380. Substance, "Cider Vinegar." Manufacturer, Monarch Vinegar Works, Kansas City, Mo. Retailer, Guth & Ohlfest, Rossville, Kan. Illegal.

No. 9388. Substance, "Cider Vinegar." Manufacturer, Pickerts Vinegar & Pickling Company, Leavenworth, Kan.. M. L. Trudell, North Cedar, Kan. Illegal.

No. 9390. Substance, "Cider Vinegar." Manufacturer, Hans P. Hansen, Willis, Kan. Retailer, Peckham & Clark, Willis, Kan. Illegal.

No. 9398. Substance, "Cider Vinegar." Manufacturer, farmer. Retailer, The Dennen Mercantile Company, Havensville, Kan. Illegal.

No. 9403. Substance, "Cider Vinegar." Manufacturer, Chris Canning, Everest, Kan. Retailer, D L. Richards (People's Store Company), Effingham, Kan. Illegal.

No. 9404. Substance, "Cider Vinegar." Manufacturer, Chris Canning, Everest, Kan. Retailer, People's Store, D. L. Richards, manager, Effingham, Kan. Illegal.

No. 9414. Substance, "Cider Vinegar." Manufacturer, C. Leland, Topeka, Kan. Retailer, G. H. Shuler, Troy, Kan. Probably incompletely acidified. Illegal.

No. 9415. Substance, "Cider Vinegar." Manufacturer, E. G. Dubaugh, Troy, Kan. Retailer, Zimmerman & Williamson, Troy, Kan. Probably incompletely acidified. Illegal.

ALCOHOLIC BEVERAGES.

No. 9286. Substance, "Adam's Special" (information of inspectors; no label on bottle). Manufacturer, The Kansas City Breweries Company, Kansas City, Mo. Retailer, R. J. Buehler, Frederick, Kan. Absolute alcohol by volume, 0.80 per cent (eight-tenths of one per cent).

No. 9287. Label, "Adam's Special. Does not come within the consideration of the internal revenue law and no government license is required. Serial No. 5550." Manufacturer, The Kansas City Breweries Company, Kansas City, Mo. Retailer, R. J. Buehler, Frederick, Kan. Absolute alcohol by volume, 0.60 per cent (six-tenths of one per cent).

No. 9288. Label, "Rochester Malt Ale. Fermented Beverage, K. C. B. C. Serial No. 550." Manufacturer, Rochester Brewery, Kansas City, Mo. Retailer, R. J. Buehler, Frederick, Kan. Absolute alcohol by volume, 1.64 per cent (one and $\frac{4}{100}$ per cent).

No. 7799. Label, "Apple Base Cider, Apricot Flavor. Serial No. 10,748." Manufacturer, National Fruit Products Company (Inc.), Memphis, Tenn. Retailer, Byron Willcuts, Topeka, Kan. Absolute alcohol by volume, 8.2 per cent (eight and two-tenths per cent).

No. 9360. Label, "Apple Base Cider, Dark, Grape Flavor." Manufacturer, National Fruit Products Company, Memphis, Tenn. Retailer, John A. Freeman, Topeka, Kan. Jobber, Davis Mercantile Company, Topeka, Kan. Absolute alcohol by volume, 7.25 per cent (seven and $\frac{5}{100}$ per cent).

No. 9360A. Label, "Apple Base Cider, Blackberry Flavor. No. 1." Sent in by Dr. W. J. Scott, Sharon Springs, Kan. Absolute alcohol by volume, 7.12 per cent (seven and $\frac{1}{100}$ per cent).

PICKLES.

No. 6452. Substance, "Pickles." Manufacturer, Otto Kuehne, Topeka, Kan. Retailer, Baker Bros., Coffeyville, Kan. Alum present. Illegal.

No. 6463. Label, "Congress Brand Sweet Pickles. One-tenth of 1% of benzoate of soda." Packed for Kansas City Wholesale Grocery Company. Retailer, Peak Bros., Kansas City, Kan. Alum present. Illegal.

No. 6465. Substance, "Pickles." Manufacturer, Squire Dingee, Chicago, Ill. Retailer, Ike Alford, Peru, Kan. Alum present. Illegal.

No. 6468. Label, "Highland Brand Sweet Split Pickles. Prepared with turmeric. Composed of cucumbers, spices, sugar and distilled vinegar. Prepared with $\frac{1}{12}$ of 1% of benzoate of soda." Manufacturer, Williams Bros. Company, Detroit, Mich. Retailer, C. F. Wimmer, Wichita, Kan. Alum present. Illegal.

No. 6469. Substance, "Pickles." Manufacturer, M. A. Gedney & Co. Retailer, E. S. Hawley, Wichita, Kan. Alum present. Illegal.

No. 6470. Substance, "Sour Pickles." Manufacturer, Otto Kuehne Preserving Company, Topeka, Kan. Retailer, East Side Racket Store, Wichita, Kan. Alum present. Illegal.

No. 7722. Label, "Madison Brand Sweet Spiced Pickles. Preserved in distilled vinegar. Flavored with choice spices and sugar and prepared with 0.001 of benzoate of soda." Manufacturer, Alart & McGruires, New York. Retailer, Carlyle Mercantile Company, Carlyle, Kan. Alum, doubtful.

No. 9228. Tested for alum. None found. Passed.

No. 9246. Tested for alum. None found. Passed.

VANOLEUM.

No. 2709. The product examined was evidently made from a more concentrated product by dilution (by information of inspector), and simply bore a druggist's label with the word "Vano-leum." It is a mixture of vanillin, coumarin and caramel in glycerin, alcohol and water. Vanillin, 0.30 per cent; coumarin, 0.09 per cent; colored with caramel in imitation of vanilla extract. Dealers are warned that if they substitute this product for vanilla they are liable to prosecution.

CATSUP.

No. 6480. Label, "Log Cabin Catsup. Contains $\frac{1}{10}$ of one per cent of benzoate of soda." Manufacturer, Lehmann-Hig-

ginson Grocery Company, Wichita, Kan. Retailer, C. P. Adams, Freeport, Kan. Anhydrous sodium benzoate, 0.19%. Illegal.

No. 7776. Examined for preservative. Passed.

No. 7777. Examined for preservative. Passed.

CHOW CHOW.

No. 9236. Alum absent. Saccharin absent. Salicylic acid absent. Passed.

ICE CREAM.

No. 9312A. Butter fat, 17.25%. Passed.

ILLEGAL JELLY.

No. 7834. Label, "Raspberry Jelly, Artificial Flavor and Color. Contains 1-10th of 1% benzoate soda." Manufacturer, Otto Kuehne Preserving Company, Topeka, Kan. Retailer, S. Pries, Alma, Kan. Illegal.

No. 7834A. Label, "Currant Jelly, Artificial Flavor and Color. Contains 1-10th of one per cent benzoate soda." Manufacturer, Otto Kuehne Preserving Company, Topeka. Retailer, S. Pries, Alma, Kan.

The two jellies above are imitation products made from apple and glucose, and contain over three times the amount of the chemical preservative, sodium benzoate, stated on the label. They contained no raspberry or currant.

MAPLE SYRUP.

No. 5330. Ash, 0.66 g. Alkalinity, soluble ash, 56.4. Alkalinity, insoluble ash, 56.0. Winton Lead No. 1.42. Passed.

HONEYS.

Polariscope Readings.

No.	Direct immediate at 20°.	Direct constant at 20°.	Invert at 20°.	Birotation.	Water.	Approximate sucrose by Clerget formula.	Remarks.
5567	14.08	20.34	22.0	6.26	19.37	1.25	Passed.
5572	16.6	19.6	20.0	3.0	19.90	.30	Passed.
5573	16.2	17.8	20.2	1.6	24.00	1.80	Passed.
6490	7.7	13.1	15.18	5.4	16.05	1.57	Passed.
6491	10.5	14.5	18.0	4.0	17.37	2.64	Passed.
6492	12.8	17.8	20.0	5.0	17.37	1.65	Passed.
6498	13.4	16.6	21.8	3.2	15.37	3.32	Passed.
7786	13.8	17.1	26.0	3.3	21.72	6.70	Passed.
9354	17.0	18.6	23.8	1.6	19.67	3.32	Passed.
9354A	18.7	20.3	25.0	1.6	17.13	3.55	Passed.

EVAPORATED MILK.

After careful study of the subject through the daily division of the Bureau of Chemistry, the United States Department of Agriculture has reached the conclusion that the standard for evaporated milk set forth in Circular No. 19 can be improved. The depart-

ment has therefore decided upon the following requirements for evaporated milk (*i. e.*, unsweetened condensed milk), which is set forth in Food Inspection Decision No. 131:

(1) It should be prepared by evaporating the fresh, pure whole milk of healthy cows, obtained by complete milking and excluding all milkings within fifteen days before calving and seven after calving, provided at the end of this 7-day period the animals are in a perfectly normal condition.

(2) It should contain such percentages of total solids and of fat that the sum of the two shall be not less than 34.3, and the percentage of fat shall be not less than 7.8 per cent. This allows a small reduction in total solids with increasing richness of the milk in fat.

(3) It should contain no added butter or butter oil incorporated either with whole milk or skimmed milk or with the evaporated milk at any stage of manufacture.

In view of the well-known tendency of factory analyses—often of necessity made rapidly and by persons not skilled as analysts—to give results above the truth with respect to fat, and especially with respect to total solids, manufacturers are advised always to allow a safe margin between their factory practice and the above-stated requirements as to percentage composition. This can be done without difficulty.

The Kansas standard for evaporated milk is twenty-eight (28) per cent of milk solids, and of the milk solids not less than twenty-seven and six-tenths (27.6) per cent is milk fat. However, the standard set forth in F. I. D. 131 will be taken into consideration in judging such products.

Nos. 2914 and 2963 reported below are both below standard in total solids, but 2914 would just pass, judged by F. I. D. 131.

No. 2963 is still below the new standard in total solids plus butter fat of 34.3, as its butter fat plus total solids is only 31.58 per cent.

No. 2914. Label, "Pickwick Evaporated Unsweetened Sterilized Milk." Packed for Kansas City Wholesale Grocery Company, Kansas City, Mo. Retailer, John Ressigger, Twenty-seventh and Brown, Kansas City. Butter fat, 8.0 per cent. Total solids; 26.35.

No. 2963. Label, "Wilson's Unsweetened Sterilized Evaporated Milk." Manufacturer, Indiana Condensed Milk Company, Sheridan, Ind. Retailer, J. T. Ronagne, 802 Minnesota Avenue, Kansas City, Kan. Butter fat, 8.3 per cent. Total solids, 23.28. Below standard in total solids. Illegal.

No. 5579. Label, "Faultless Brand Pure Sterilized Evaporated Milk. Faultless evaporated milk is a pure, unsweetened, sterilized condensed milk." Manufacturer, Faultless Condensed Milk Com-

pany, Tonganoxie, Kan. Retailer, Dessery & Dessery, Tonganoxie, Kan. Butter fat, 5.06 per cent. Total solids, 15.31. Illegal.

No. 5580. Label, "Faultless Brand Pure Sterilized Evaporated Milk. Faultless evaporated milk is a pure, unsweetened, sterilized condensed milk." Manufacturer, Faultless Condensed Milk Company, Tonganoxie, Kan. Retailer, Dessery & Dessery, Tonganoxie, Kan. Butter fat, 5.35 per cent. Total solids, 16.47. Illegal.

No. 5581. Label, "Faultless Brand Pure Sterilized Evaporated Milk. Faultless evaporated milk is a pure, unsweetened, sterilized condensed milk." Manufacturer, Faultless Condensed Milk Company, Tonganoxie, Kan. Retailer, Dessery & Dessery, Tonganoxie, Kan. Butter fat, 5.22 per cent. Total solids, 15.56. Illegal.

The last three above are exceedingly poor samples of evaporated milk. They contain only slightly higher fat and solids than ordinary good milk, which averages 4.00 to 4.50 per cent fat and 12.50 to 13.50 solids. The samples in question had been merely evaporated slightly, but cooked enough to give the color and flavor of evaporated milk. The very lowest legal limit for evaporated milk in Kansas is 7.76 per cent fat and 28.0 per cent solids.

No. 2915. Butter fat, 8.8 per cent. Total solids 29.78. Passed.

LEMON EXTRACTS.

No. 3963. Per cent lemon oil, 5.6. Passed.

No. 7749. Per cent lemon oil, 6.7. Passed.

No. 7749A. Per cent lemon oil, 6.1. Passed.

No. 7757. Per cent lemon oil, 6.1. Passed.

No. 8763. Per cent lemon oil, 7.7. Passed.

No. 9346. Per cent lemon oil, 5.1. Passed.

No. 9399. Label, "Exposition Band Lemon Extract. Serial No. 3891." Manufacturer, Blanke-Baer Chemical Company, St. Louis, Mo. Retailer, A. E. Wilson, Baileyville, Kan. Lemon oil, 2.3 per cent. Illegal.

ILLEGAL TERPENELESS LEMON EXTRACTS.

"Products sold for lemon flavoring conform either to the standard for lemon extract or to that for terpeneless extract of lemon, and the label shows to which of said standards they conform."—Kansas Food and Drug Standards, page 18.

No. 2800. Label, "Flavor of White Star Lemon, for Ice Cream, Pastry, etc. Artificially colored." Manufacturer, White Star Medicine Company, St. Joseph, Mo. Retailer, J. C. Whitmer & Co., Nortonville, Kan. Lemon oil, 0.4 per cent. Citral, 0.07 per cent. Illegal.

No. 2895. Label, "XXXX Brand Terpeneless Lemon Extract Comp., Lawrenceburg, Ind." Manufacturer, McCullough Drug

Company, Lawrence, Ind. Retailer, Carlin & Supple, Solomon, Kan. Citral, 0.05 per cent. - Illegal.

No. 5575. Label, "Ayres' Brand Terpeneless Extract Lemon." Packed for Kansas City Wholesale Grocery Company. Retailer, W. A. Dunmire, Lawrence, Kan. Citral, 0.10 per cent. Illegal.

No. 7798. Label, "Banner Brand One-Quarter Standard Strength Terpeneless Lemon Flavor." Packed for the Theo. Poehler Mercantile Company, Lawrence and Emporia, Kan. Citral, 0.10 per cent. Illegal.

No. 7798A. Label, "2 oz. Full Measure American Beauty Brand Terpeneless Half-Strength Lemon Flavor; 40 per cent alcohol." Manufactured for Kansas City Wholesale Grocery Company, Kansas City, Mo. Citral, 0.06 per cent. Illegal.

No. 9381. Label, "Standard Flavor of Lemon." Manufacturer, Parkhurst-Davis Mercantile Company, Topeka, Kan. Retailer, Harrison & Shyne, St. Marys, Kan. Lemon oil, 0.08 per cent. Citral, 0.005 per cent. Illegal.

No. 9387. Label, "Orchid Brand Terpeneless Half-Strength Lemon Flavor." Manufactured for the Bitman Tood Grocery Company, Leavenworth, Kan. Retailer, W. W. Krug, Larkenburg, Kan. Citral, 0.01 per cent. Illegal.

State Water Survey No. 10.

By E. H. S. BAILEY, Ph. D., director, C. C. YOUNG, A. B., analyst.

(Continued from page 112, May BULLETIN.)

DETAILS.

CITY SUPPLIES.

246 *Atchison*. This is a river water treated by sedimentation with coagulant.

247 *Abilene*. This supply comes from Sand Springs, Kan. The spring outcroppings are at the edge of the Dakota sandstone on the right of way of the Union Pacific railroad. This is piped to the city of Abilene and is a particularly good supply for municipal use.

248 *Arkansas City*. One-third of this supply is obtained from shallow wells and two-thirds from springs. The analysis was made upon the mixed water. This is a relatively hard water.

249 *Augusta*. a Well 30 feet deep. b Well 28 feet deep. The well 30 feet deep was intended for the city supply. It is a relatively soft water and would undoubtedly yield a satisfactory supply, if the quantity was sufficiently large. However, there is only a very small flow into the well and not enough for the demands of the city;

b is to be used only temporarily until the supply can be eked out or until some new supply can be developed.

250 *Baxter Springs*. This water comes from deep wells and is a soft and very excellent supply.

251 *Belleville*. This water comes from deep wells and is practically a chalybeate water. The large amount of iron makes it troublesome for use as a city supply.

252 *Burlington*. Makes use of the river water; is relatively hard and is purified by filtration.

253 *Bonner Springs*. This supply is taken from a series of wells on the south bank of the Kaw river. This supply is almost unfit for use on account of the large amount of iron present.

254 *Caney*. The supply is taken from the Caney river. This is an unsatisfactory supply, and every attempt is being made by the city to find a new one.

255 *Columbus*. This supply comes from a deep well and is very satisfactory. It is, however, relatively hard.

256 *Chanute*. The city takes its supply from the river. The only means of purification is plain sedimentation.

257 *Conway Springs*. Supply comes from shallow wells. This is a very soft water.

259 *Concordia*. Supply is taken from shallow wells. It is a relatively hard water and contains considerable organic matter.

260 *Clifton*. This supply of water comes from shallow wells; shows presence of considerable organic matter, which probably comes from seepage. It was suggested that the well be cleaned out and protected.

261 *Dodge City*. Supply comes from deep well and is very satisfactory. It is a relatively soft supply.

262 *Ellinwood*. This supply is taken from deep wells. Although this is a relatively hard water, the chemical analysis indicates that it is relatively pure and wholesome.

263 *Erie*. Supply comes from shallow wells. This is a relatively hard water and would give considerable trouble if used for industrial purposes.

264 *El Dorado*. This supply comes from shallow wells and is a relatively soft water.

265 *Fredonia*. Takes its supply from the river above the dam, the only method of purification being plain sedimentation.

266 *Garden City*. Supply comes from shallow wells. The water is very hard and a great deal of trouble is experienced in attempting to use the water either for household or industrial purposes.

- An attempt is being made in Garden City to locate a deep well supply which will yield soft water.

267 *Garnett*. This supply comes from an artificial lake and is purified by means of filtration. This is a relatively soft water.

268 *Goodland*. Obtains its supply from deep wells and has a relatively soft and very satisfactory supply.

269 *Great Bend*. The waterworks company of Great Bend obtains its supply from shallow wells.

270 *Havensville*. Supply comes from shallow wells. This is a relatively hard water.

271 *Herington*. This city is supplied from shallow wells. These wells are located after considerable prospecting to avoid hard water. Although this water is relatively hard, it is much softer than the ordinary ground water about Herington.

272 *Hays City*. Obtains its supply from shallow wells.

273 *Hanover*. This supply comes from shallow wells.

274 *Holton*. This supply comes from shallow wells.

275 *Hiawatha*. Supply comes from shallow wells and is a relatively soft water.

276 *Iola*. This city takes its supply from the river and the method of purification is by sedimentation with coagulant. The authorities are anticipating the use of hypochlorite.

277 *Kingman*. Obtains its supply from a spring which yields a very soft water.

278 *Lawrence*. The supply at Lawrence is taken from one large well and several small wells in the Kaw river bottoms. This supply is contaminated with considerable amount of iron. Also the reservoirs which are used for sedimentation for removal of the iron are infested with algæ.

279 *Lindsborg*. Supply comes from shallow wells which yield a hard water.

280 *Larned*. Supply comes from shallow wells which yield a very hard water which would be unfit for use for industrial purposes and is very inferior for household use.

281 *Minneapolis*. This supply comes from shallow wells.

282 *Manhattan*. This city takes its supply from shallow wells on the west bank of the Blue river. The water is pumped to a storage reservoir on the top of the adjacent bluff.

283 *Marion*. Supply comes from shallow wells. This is a very hard water and insufficient for the use of the town.

284 *Moundridge*. This supply comes from shallow wells yielding a very hard water unfit for domestic or industrial use.

285 *Meade*. Supply comes from deep wells. It is a relatively soft water.

286 *Newton*. A series of deep wells for the supply of the city of Newton yield a soft water of unquestioned purity.

287 *Norton*. Supply comes from shallow wells. A relatively hard water.

288 *Neodesha*. Water comes from Fall river. The method of purification is sedimentation with coagulant and the subsequent filtration through an updraft filter of such design that it needs constant attention to maintain a high standard of efficiency.

289 *Ottawa*. *a*, Tap water, *b*, river water; *b* is a characteristic river water, while *a* is the water after treatment by means of sedimentation with coagulant.

290 *Osborne*. This water comes from shallow wells.

291 *Plainville*. City receives its supply from shallow wells. The analysis herewith given was made immediately after cleaning the well and the organic content probably not characteristic of the water. However, the total solids and mineral matter are approximately normal.

292 *Pratt*. This water comes from shallow wells.

293 *Pleasanton*. The city has an impounding reservoir which collects sufficient water for the needs of the city. It is treated with coagulant and filtered through Pittsburg type filters. This gives a soft and satisfactory supply.

294 *Peabody*. Supply from shallow wells. This is a relatively hard water.

295 *Parsons*. The city obtains its supply from the river above the dam and it is purified by filtration.

296 *Pittsburg*. This supply comes from deep wells. The water is rather hard for a deep well supply.

297 *Stockton*. Supply from shallow wells. It is relatively hard water.

299 *Salina*. Supply from deep wells. This is a relatively hard water.

300 *Sharon Springs*. Supply from shallow wells.

301 *St. Marys*. Supply from shallow wells.

302 *Stafford*. This supply comes from deep wells and is a fairly soft water.

303 *Topeka*. This supply comes from shallow wells in the Kaw river bottom.

304 *Wellington*. Shallow wells. This is an extremely hard water and unfit for domestic or industrial use for this reason.

305 *Waverly*. *a*, Well 185 feet deep; *b*, well 20 feet deep; *c*,

reservoir ; *b* and *c* are being used at the present time for city supply. The city anticipated using the well 185 feet as an addition to the present city supply. This, however, seems to be polluted by organic matter, and is also very hard. A sanitary survey has been made of the surroundings, and another report on this well will be made later.

306 *Wa Keeney*. This water comes from shallow wells. These wells yield a relatively soft water.

307 *Weir City* has a deep well supply. It seems that this well is inadequately protected so that surface water finds its way down the shaft to the deep well.

SANITARY ANALYSIS OF PROPOSED CITY SUPPLIES.

308 *Augusta*. *a*, Carter well ; *b*, Walnut river ; *c*, Whitewater river. These samples were received from Professor Hoad, who went over the ground thoroughly with Mayor Weidlein of Augusta. These samples are prospects for replenishing the city supply at Augusta. The Carter well is supposedly the characteristic ground water of the Whitewater valley. The Walnut river is less than one-third as hard as the Whitewater. Some method of purification will have to be installed if either the Walnut or Whitewater rivers are used.

309 *Burden*. Proposed city supply. Samples received from Mr. E. E. Brooks. Mr. Brooks was referred to the state sanitary engineer, Professor Hoad.

310 *Coldwater*. Proposed city supply. Sent in at the request of state sanitary engineer, Professor Hoad. This is a relatively soft water and should give a satisfactory supply.

311 *Lyndon*. Sample sent in by J. W. Mavity. As far as chemical analysis can show there is very little evidence of pollution. This water should be a satisfactory supply.

312 *La Cygne*. *a* and *b* are two analyses made on the same supply a week apart. There is some evidence of organic matter, indicated by the analysis.

313 *Luray*. This is a test well for the proposed city supply. The water is very hard.

MISCELLANEOUS WATER ANALYSES.

314 *Scott City*. Analysis of school well sent in by Dr. H. Marshall. The well shows considerable pollution and it was advised that the well be cleaned out and protected according to approved methods.

315 *Osage City*. Mine water. Sample of water sent in from Osage City, to determine whether or not it was sufficiently acid to

destroy fish if it was allowed to run into the river. It was found that this water contains a large amount of calcium and iron bicarbonates, but this is not acid in reaction.

316 *Oxford*. Partial analysis made of school well.

317 *Mankato*. Analysis made of the supply used by the Mankato bottling works. It is rather a hard water and does not give satisfactory results in the bottling. It was suggested that this water be softened.

318 *Lawrence*. Sample of water received from Mr. H. B. Peairs, Lawrence, Kan. This shows a marked evidence of pollution by organic matter.

319 *Lawrence*. Sample of water received from Mrs. F. L. Morris, Lawrence, Kan. A large amount of nitrates indicate that the water had received pollution.

320 *Jetmore*. Sample of water from Mrs. J. W. Kenyon's well. Sample received through Dr. A. B. Scott. There is considerable evidence that this water is receiving pollution.

321 *Hiattville*. This water was received from Miss Kennel, Hiattville. It contained a large amount of organic matter, as indicated by the very high oxygen consumed and the fact that the residue charred very badly upon ignition.

322 *Belle Plaine*. Sample received from Dr. John J. Sippy. This water contained so much organic matter that one might say it was little better than partially purified sewage. This well was located within a few feet of a privy back of a church.

MISCELLANEOUS ANALYSES.

Sample of boiler compound was examined in the laboratory. It contained 279 grams per liter of sodium hydroxide, 42.8 grams per liter of sodium carbonate, and was very highly colored with tar residue.

A fire extinguisher manufactured by the United States Dry Fire Extinguisher Company, Leipsig, Ohio, was examined and found to be 99.75 per cent pure sodium bicarbonate colored slightly pink with Venetian red. The can held approximately two and one-half pounds of this mixture. The retail price was \$3.00. The total cost, including can and contents, could not possibly be over ten cents. It is a very well known fact that agents are plying the state selling these fraudulent extinguishers. All persons having any of these contrivances should be notified that they are valueless.

BULLETIN

OF THE

Kansas State Board of Health.

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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DRACON, Registrar.

No. 7.

JULY, 1911.

VOL. VII

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How many physicians take their own advice ?

Don't take your business with you on your vacation.

Most men can do more and better work in eleven months with a month's vacation than in twelve months' continuous work.

Davenport estimates that the United States will have a population of 1200 millions by the end of this century, if the present ratio of increase for the past hundred years continues. The wisdom of the protection of our sources of water supply from the sewage of such vast multitudes of people then crowded into our cities is self-evident.

Experiments conducted by Anderson and Goldberger, of the public health laboratories, in which they were able to produce measles in rhesus monkeys by inoculation of blood from a patient suffering from measles, seems to indicate that the blood of such patients is infective only for a short time before and about twenty-four hours after the appearance of the eruption.

This is the bacillus that causes man's death from bubonic plague. This is the flea that bites man and so conveys the bacillus that causes man's death from bubonic plague. This is the rat that harbors the flea that bites man and so conveys the bacillus that causes man's death from bubonic plague. These are the mites that reside on the rat and so hamper the flea that it cannot bite man or convey the bacillus that causes man's death from bubonic plague.—*Michigan Bulletin.*

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
Meade.....	0	1	0	0	0	0	0	0	0	0	7	0
Miami.....	1	0	1	0	0	0	0	0	0	0	0	0
Mitchell.....	0	3	0	0	0	0	1	0	0	0	0	1
Montgomery.....	3	0	2	1	0	0	0	0	0	0	11	0
Morris.....	0	0	2	0	0	0	0	0	0	0	25	0
*Morton.....	0	0	0	0	0	0	0	0	0	0	0	0
Nemaha.....	0	0	0	0	0	0	0	0	0	0	0	0
Neosho.....	0	0	2	0	0	0	0	0	0	0	7	0
Ness.....	1	0	0	0	0	0	0	0	0	0	0	0
Norton.....	2	2	1	1	0	0	0	0	1	0	0	0
Osage.....	1	1	0	0	0	0	1	0	0	0	0	0
Osborne.....	2	0	2	0	0	0	0	0	0	0	24	0
Ottawa.....	0	0	0	0	0	0	0	0	0	0	12	0
Pawnee.....	0	0	2	0	1	1	0	0	0	0	0	0
Phillips.....	0	0	0	0	0	0	1	0	0	0	0	0
*Pottawatomie.....	0	0	0	0	0	0	0	0	0	0	1	0
Pratt.....	0	0	0	0	0	0	0	0	0	0	0	0
Rawlins.....	0	0	0	0	0	0	0	0	0	0	0	0
*Reno.....	0	0	0	0	0	0	0	0	0	0	0	0
Republic.....	0	0	2	0	0	0	1	0	0	0	0	0
Rice.....	1	0	0	0	0	0	0	0	7	0	2	0
Riley.....	0	0	0	0	0	0	4	0	4	0	18	0
Rooks.....	0	0	0	0	0	0	0	0	0	0	0	0
*Rush.....	0	0	0	0	0	0	0	0	0	0	0	0
Russell.....	0	0	0	0	0	0	0	0	0	0	0	0
Saline.....	0	0	3	0	1	0	3	0	2	0	0	0
Scott.....	0	0	0	0	0	0	0	0	0	0	1	0
Sedgwick.....	2	2	0	0	0	0	0	0	0	0	0	0
Seward.....	0	2	0	0	0	0	1	0	0	0	0	0
Shawnee.....	1	1	0	0	1	0	0	0	0	0	0	0
Sheridan.....	0	0	0	0	0	0	0	0	0	0	0	0
Sherman.....	0	0	0	0	0	0	0	0	1	0	1	0
Smith.....	0	0	2	0	0	0	0	0	0	0	0	0
Stafford.....	0	0	0	0	0	0	0	0	0	0	3	0
*Stanton.....	0	0	0	0	0	0	0	0	0	0	0	0
Stevens.....	0	0	0	0	0	0	3	0	0	0	0	0
Sumner.....	2	0	0	0	0	0	0	0	0	0	0	0
Thomas.....	0	0	0	0	0	0	0	0	0	0	0	0
Trego.....	0	0	0	0	0	0	0	0	0	0	0	0
*Wabaunsee.....	0	0	0	0	0	0	0	0	0	0	0	0
Wallace.....	0	0	0	0	0	0	2	0	0	0	13	1
Washington.....	0	0	0	0	0	0	0	0	0	0	0	0
*Wichita.....	0	0	0	0	0	0	0	0	0	0	0	0
Wilson.....	0	0	0	0	0	0	0	0	0	0	2	0
Woodson.....	0	0	2	0	0	0	0	0	0	0	0	0
*Wyandotta.....	0	0	0	0	0	0	0	0	0	0	0	0
Cities:												
Atchison.....	1	0	1	0	0	0	1	0	1	0	0	0
Coffeyville.....	1	1	0	0	0	0	1	0	0	0	0	0
Hutchinson.....	1	0	3	0	0	2	0	0	0	0	8	0
Fort Scott.....	2	2	0	0	0	0	0	0	0	0	0	0
Kansas City.....	5	10	8	2	4	0	5	0	3	0	11	0
Leavenworth.....	4	3	1	0	4	0	1	0	0	0	1	0
Parsons.....	2	2	1	1	0	0	2	0	2	0	0	0
Pittsburg.....	2	2	2	2	0	0	0	0	0	0	0	0
Topeka.....	9	9	0	0	4	0	0	0	10	1	4	0
Wichita.....	7	7	4	4	0	0	1	0	1	0	18	2
<i>State Institutions.</i>	164	1	3	1	0	0	0	0	0	0	0	0

* No report.

Have a purpose.

The finest thing in the world—consistency.

The first annual Summer School for Physicians and Health Officers was a success. Thirty-nine registered.

FOOD ANALYSES No. XXXIV.

By Prof. J. T. WILLARD, Food Analyst for the Board, and C. A. A. UTT, Assistant.

MANHATTAN, KAN., May 13, 1911.

We present in the following pages results upon a considerable number of samples of foods examined during the last few months. A large number of other samples have been examined but the results are not quite ready for publication.

HAMBURG STEAK, ETC.

Insp. No. 9328, Serial No. 3867. Hamburg steak, manufactured by Louis Wiss, Topeka, and sold by the Coca-Cola bottling works at the Topeka fair. The sample was in fairly good condition on arrival, and was tested by steam distillation for sulphites. Sulphites present. Illegal.

Insp. No. 9339, Serial No. 3868. Hamburg steak, manufactured by the Shawnee grocery, Topeka, and sold by Stitt & Root at the Topeka fair. The sample was in fairly good condition when received. Sulphites present. Illegal.

Insp. No. 9340, Serial No. 3869. Hamburg steak, manufactured by Louis Wiss, Topeka, and sold by W. H. Brooks at the Topeka fair. The sample was in fairly good condition when received. Sulphites present. Illegal.

GRAHAM FLOUR.

It is alleged to be the practice now to make so-called Graham flour by mixing low-grade flour with bran or shorts. Two samples were sent in for examination with reference to this possibility. They were submitted to Prof. C. O. Swanson, of the Agricultural Experiment Station, and separated by means of the sieves used in milling. In this way the relative amounts of flour, bran and shorts and the characteristics of the bran were ascertained. In both cases the materials were present in quantities consistent with genuineness of the Graham flour, and the bran and shorts still had much flour-producing material attached to them. There was therefore no evidence upon which it could be asserted that the flours were not genuine Graham flour, which should be a product made by grinding cleaned wheat without separating any of the products of grinding.

BUTTER.

Insp. No.	Serial No.	SELLER.	City.	Weights.			Percentage.				Class.
				Maxi-mum.	Mini-mum.	Average.	Water.	Fat.	Casein.	Ash.	
2836	3879	T. H. Dress.....	Kansas City.....	15.66	14.55	15.24	14.79	80.86	1.15	3.22	Illegal.*
2837	3880	Fred C. Kaufman.....	Kansas City.....	15.21	14.52	14.84	13.20	80.84	1.51	4.36	Illegal.
2838	3881	W. A. Griswold & Son.....	Kansas City.....	15.67	14.81	15.10	14.62	81.17	1.96	2.86	Illegal.
2839	3882	Samuel Stewart.....	Kansas City.....	14.95	14.62	14.74	13.26	83.33	1.65	1.73	Illegal.
2840	3883	John Seitz.....	Kansas City.....	15.52	14.80	15.21	16.25	79.10	1.43	3.23	Illegal.

*As to weight. Passed as to composition.

ICE CREAM.

Insp. No.	Serial No.	DEALER.	Place.	Per cent fat.	Class.
7699	3668	A. Buchanan, Turkish Candy Co. (strawberry)	Emporia	13.60	Passed.
7700	3664	A. Buchanan, Turkish Candy Co.	"	16.10	Passed.
7701	3665	Cold Storage Co.	"	14.40	Passed.
7702	3666	Cold Storage Co.	"	13.30	Illegal.
7703	3667	Cold Storage Co.	"	13.30	Illegal.
7704	3668	Palace of Sweets	"	18.70	Passed.
7705	3669	Palace of Sweets	"	19.70	Passed.
7706	3670	Rural Ice Cream Co.	"	9.60	Illegal.
7707	3671	S. B. Maxwell.	"	32.40	Passed.
7708	3672	S. B. Maxwell.	"	21.10	Passed.
7709	3673	F. Sowerby.	"	33.00	Passed.
7723	3771	Iola Creamery Co.	Iola	19.20	Passed.
7724	3772	Brownfield, Davis & Siffers.	"	17.20	Passed.
7725	3773	Brownfield, Davis & Siffers.	"	15.30	Passed.
7726	3774	Crabb & Morris.	"	20.40	Passed.
7727	3775	W. G. Miller Ice Cream and Bottling Works.	"	20.00	Passed.
7728	3776	Boesworth & Flanagan	Paola	16.50	Passed.
7729	3777	U. S. Milk Co.	"	15.70	Passed.
9232	3780	Pokorny Pharmacy.	La Crosse	12.50	Passed.
9233	3781	C. C. Rodarmel.	"	10.40	Illegal.
9234	3782	Semple Drug Co.	"	6.60	Illegal.
9235	3783	C. B. Williams	Bison.	9.60	Illegal.
9314	3839	Little's Pharmacy.	Alta Vista	12.80	Passed.
9315	3840	J. F. Terras	Alma	14.40	Passed.
9316	3841	Dr. A. A. Meyer.	"	11.30	Illegal.
9319	3842	B. A. Ray.	Dwight.	14.10	Passed.
9320	3843	L. P. Foy.	"	9.60	Illegal.
9321	3847	Seward Avenue M. E. Church	Topeka (fair)	14.00	Passed.
9322	3848	Coco-Cola Bottling Works.	"	14.00	Passed.
9323	3849	Coco-Cola Bottling Works.	"	14.30	Passed.
9324	3850	Baughman Bros.	"	9.60	Illegal.
9325	3851	Baughman Bros.	"	11.00	Illegal.
9326	3852	B. G. Walker.	"	14.30	Passed.
9327	3853	J. A. Wellke	"	14.00	Passed.
9328	3854	R. Hughes.	"	15.00	Passed.
9329	3855	Baughman Bros.	"	15.00	Passed.
9330	3856	Palace of Sweets (Geo. Charowhas).	"	14.80	Passed.
9331	3857	J. E. Foster.	Wamego.	9.78	Illegal.
9332	3858	L. Ledoux (Kansas City).	"	13.30	Illegal.
9333	3859	J. Griffing.	"	14.00	Passed.
9334	3860	W. W. Grieve.	"	12.80	Illegal.
9335	3861	G. W. Jenkins.	"	9.60	Illegal.
9336	3862	P. C. Hulburd.	"	15.70	Passed.
9337	3863	J. E. Foster.	"	10.40	Illegal.
7767	3946	Beck's Cafe.	Dodge City.	9.20	Illegal.
7768	3947	J. J. Felkel.	"	8.10	Illegal.
7769	3948	E. C. Sturgeon	"	10.30	Illegal.
7770	3949	John Giesel & Son.	"	7.30	Illegal.
9406	4267	I. J. Kinyon.	Sabetha.	14.80	Passed.
9412	4268	Nigus Bros.	Hiawatha.	12.00	Illegal.
9413	4269	George Sipe.	"	20.80	Passed.
9416	4275	C. V. Jacobs	Atchison	13.90	Passed.
9417	4276	Zervakos Bros.	"	12.40	Illegal.
9418	4277	F. F. Dilgert.	"	12.40	Illegal.
9419	4278	Marino Bros.	"	12.30	Illegal.
9420	4279	Mrs. K. H. Poehler.	"	15.60	Passed.
9431	4283	H. M. Stanley.	Highland	13.40	Illegal.
2897	4288	Y. M. C. A.	Topeka	5.95 6.40	Illegal.

MILK.

Insp. No.	Serial No.	SELLER.	Place.	Fat.	Total solids.	Solids not fat.	Class.
6494	4018	J. M. Smith.	Wichita.	3.50	12.96	9.46	Passed.
6495	4019	O. L. Chalfan.	"	3.75	12.75	9.00	Passed.
6496	4020	O. L. Chalfan.	"	2.80	9.89	7.09	Illegal.
6497	4021	F. L. Engler Dairy.	"	4.80	13.96	9.16	Passed.
6498	4022	J. W. Chapman.	"	3.15	12.25	9.10	Illegal.
6499	4023	J. S. Evans.	"	4.10	13.33	9.23	Passed.

PICKLES.

Insp. No. 9294, Serial No. 3796. Sour Pickles, Magic City brand, manufactured by the Squire Dingee Company, Chicago, Ill. Jobber, Ridenour-Baker Grocery Company, Kansas City; sold by W. E. Cox, Healy, Kan. Sample taken July 27, 1910, and was in good condition. Copper was absent, but alum present. Illegal.

Insp. No. 9295, Serial No. 3797. Sweet Pickles, Magic City brand, manufactured by the Squire Dingee Company, Chicago, Ill. Jobber, Ridenour-Baker Grocery Company, Kansas City. Sold by F. Betlock, Marienthal, Kan. Said to contain 0.1 per cent of sodium benzoate. Sample purchased July 28, 1910. Pickles were in good condition and gave no reaction for copper, but a good one for alum. Illegal.

FLOUR.

A number of samples of flour have been submitted to be tested with reference to artificial bleaching. Some of these gave pronounced reactions with the Griess reagent for nitrites, and had undoubtedly been subjected to the action of oxides of nitrogen. In other cases the reaction was slight, and there was a possibility that the nitrite-reacting material had been absorbed by reason of proximity to samples of bleached flour. Upon these doubtful cases no report is made at this time. The following gave unequivocal results. The sacks from which the samples were taken were not marked "bleached."

Insp. No. 2872, Serial No. 4233. Polar Bear brand, manufactured by the New Era Milling Company, Arkansas City, Kan. Moderately bleached. Illegal.

Insp. No. 2873, Serial No. 4234. Polar Bear brand, manufactured by the New Era Milling Company, Arkansas City, Kan. Moderately bleached. Illegal.

Insp. No. 7793, Serial No. 4131. Gold Band brand, manufactured by the Central Kansas Milling Company, Lyons, Kan. Lightly bleached. Illegal.

Insp. No. 9426, Serial No. 4355. Our Pride brand, manufactured by the Manhattan Milling Company, Manhattan, Kan., and sold by J. J. Gormley & Co., Purcell, Kan. Slightly bleached. Illegal.

Insp. No. 9427, Serial No. 4356. Orr's Best, manufactured by Orr Bros., Clay Center, Neb., and sold by J. J. Gormley & Co., Purcell, Kan. Moderately bleached. Illegal.

Insp. No. 9463, Serial No. 4435. Peerless brand, manufactured by McDowell & Mendenhall, Fairbury, Neb., and sold by James Nation, Hollenberg, Kan. Moderately bleached. Illegal.

Insp. No. 9464, Serial No. 4436. New Process brand, manufactured by Black Bros., Beatrice, Neb., and sold by the Barr & Dean Mercantile Company, Hollenberg, Kan. Moderately bleached. Illegal.

Insp. No. 9467, Serial No. 4437. Little Hatchet brand, manufactured by Zwonachek & Aksamit, Wilber, Neb., and sold by Albert Pejsa, Hanover, Kan. Moderately bleached. Illegal.

Insp. No. 9468, Serial No. 4438. Best High Patent, manufactured by Hanover Mills, Hanover, Kan., and sold by Albert Pejsa, Hanover, Kan. Moderately bleached. Illegal.

Insp. No. 9473, Serial No. 4439. New Process brand, manufactured by Black Bros., Beatrice, Neb., and sold by Ferguson & Spence, Hanover, Kan. Moderately bleached. Illegal.

The following samples were found to be unbleached.

Insp. No. 7773, Serial No. 4005. Ivory brand, manufactured by the Cedar Point Milling Company, Cedar Point, Kan.

Insp. No. 9442, Serial No. 4357. American Eagle brand, manufactured by the Lee Warren Milling Company, Salina, Kan., and sold by the Chase Wholesale Company, Topeka, Kan.

RAILROAD CAMP SUPPLIES.

The attention of one of the inspectors was directed toward the quality of food supplied the workmen at a railroad camp near Gas City, and another near Erie, Kan., and samples were sent in for such examination as seemed warranted.

Insp. No. 2846, Serial No. 3934. Among the food articles was a piece of meat. On arrival it was in very bad condition, soft, offensive in odor and slimy. As it had been shipped without refrigeration there was no way of judging to what extent this condition had come on since sampling it.

Insp. No. 2847, Serial No. 3935. This was a sample of dried prunes. They were of a very inferior grade, very dirty and wormy, and would require extremely careful sorting and cleaning to be at all fit for use.

Insp. No. 2848, Serial No. 3936. Oatmeal. This sample was dirty and contained extraneous matter, including jute or other fiber from bagging material, a crust of salt and several chunks of unidentified substance.

Insp. No. 2849, Serial No. 3937. This was an unlabeled can of tomatoes of a cheap grade but in fairly good condition. The tomatoes were somewhat broken up and the can was slightly corroded. The can contained 17½ ounces of liquid and 14½ ounces of tomato.

Insp. No. 2850, Serial No. 3938. Canned Peas. Dux brand June Peas, packed by P. Hohenadel, jr., Company, Rochelle, Ill., and Janesville, Wis. These were large size peas but had no other indication of inferiority.

Insp. No. 2851, Serial No. 3939. Compound Coffee, manufactured by C. F. Blanke & Co., place of manufacture not stated. The label stated that the article contained chickory and cereal. It was in the ground condition and there was no occasion to question the statement.

Insp. No. 2852, Serial No. 3940. Rice. This was in good condition, though of inferior grade due to its consisting wholly of broken kernels. This, of course, would not reduce its nutritive value.

Insp. No. 2853, Serial No. 3941. Dried Kidney Beans. Some of these were split and broken and there was some insect infestation. As a whole the sample was very dusty.

Insp. No. 2854, Serial No. 3942. Butter Beans. These were of an inferior grade and would require careful picking over for use. The sample included one dead fly.

Insp. No. 2855, Serial No. 3943. Navy Beans. These were of an inferior grade, being somewhat broken, and would require careful picking over for use.

Insp. No. 2856, Serial No. 3944. Raisins. These were loose and many were hard and angular. They were very dirty. One dead fly and one live insect were observed in the sample.

Insp. No. 2857, Serial No. 3945. Dried Peas. These were somewhat broken and inferior in grade but exhibited no special features.

On the whole the articles submitted were evidently of cheap grade but there would be nothing unwholesome in them if they were properly sorted and washed before cooking. Whether this was done or not depends upon the ideals of the cook.

SHORT-MEASURE PACKAGES.

Cans of several articles advertised for sale by the Owl Grocery, Topeka, Kan., as one-gallon cans or pails were submitted for examination with reference to the capacity of the container and the extent to which it was filled.

Insp. No. 7794, Serial No. 4224. Sorghum. Manufacturer not stated; jobber, H. R. Whittelsey Mercantile Company, Topeka. The total capacity of the pail measured with water by United States standard measure was three and three-fourths quarts, and it contained three quarts and one pint (scant) of sorghum by United States standard measures. Illegally advertised.

Insp. No. 7795, Serial No. 4225. Canned Yellow Freestone Peaches, manufactured by Golden State Canning Company, Ontario, Cal.; jobber, H. R. Whittelsey Mercantile Company, Topeka. Total capacity of the can, measured with water by United States standard measures, was three and one-fourth quarts, and it contained three quarts of peaches by United States standard measures. Illegally advertised.

Insp. No. 7796, Serial No. 4226. Canned Apricots, Etiwanda brand, manufactured by Golden State Canning Company, Ontario, Cal.; jobber, Whittelsey Mercantile Company, Topeka, Kan. Total capacity of the can, measured with water by United States standard measures, was three and one-fourth quarts, and it contained three quarts of apricots by United States standard measures. Illegally advertised.

Insp. No. 7797, Serial No. 4227. Corn Syrup (cane flavor), Imperial brand, manufactured for MoCord-Kistler Mercantile Company, Topeka; jobber, Whittelsey Mercantile Company. Total capacity of can, measured with water by United States standard measures, was three and three-fourths quarts, and it contained three quarts and one pint (scant) of syrup by United States standard measures. Illegally advertised.

DRUG ANALYSES No. XXXVI.

By L. E. SAYRE, Director; L. D. HAVENHILL, Chief; G. W. WATSON, Analyst;
C. M. STERLING, Microscopist.

The present report aims to include a variety of preparations as sent in by the inspectors. It will be noted that one of these preparations, especially, belongs to a class such as the druggist makes himself, that of soap liniment. The duty of the drug laboratory is accomplished when it reports its findings to the State Board of Health, but it may not be out of place to state that soap liniment is a preparation which has for years been a variable one, some druggists being convinced that they have a formula for it which is superior to that of the United States Pharmacopœia. Many pharmacists do not realize the importance of holding to a uniform standard in such a preparation as soap liniment, and when it is considered that there are different grades of Castile soap upon the market it is not to be wondered that different grades of soap liniment are to be found. The hope is that reports of this kind will stimulate druggists to be more careful in adhering to the official standard and will see to it that the *official* Castile soap only is used. The official soap, it will be seen from reference to the United States

Pharmacopœia, is an olive oil and soda soap and should not contain more than 36 per cent of water. It should also be free from animal fats, etc. Soap iniment made by the official formula will furnish a uniform and satisfactory preparation.

I would call attention again to the necessity of making tinctures by following the Pharmacopœia implicitly. A tincture of nux vomica made from the fluid extract will not have the same physical properties as that made by the official directions from the extract of nux vomica as directed on page 474 of the Pharmacopœia. The same is true of the tincture of aconite. If made from the fluid extract it is very likely to have different physical properties than if made by the directions given on page 453 of the Pharmacopœia.

Attention is again called to the variability in the elixirs of iron, quinine and strychnine phosphates. Taking the preparation as furnished by the different formulas of the various manufacturers we are sure to have a variability which it is hoped will soon be eliminated.

The following drugs and preparations as analyzed in the drug laboratory are herewith reported:

TINCTURE OF DIGITALIS.*

Lab. No.	Insp. No.	NAME.	City.	Gms. in 100 cc. extractive.	Per cent alcohol.
4717	8751	Corner Pharmacy.....	Independence...	3.275	47.50
4809	8829	Atwood's Drug Store.....	Palmer.....	3.272	54.60
4810	8830	Algies' Cash Drug Store.....	Linn.....	3.208	47.50
4812	8833	Globe Pharmacy.....	Miltonvale.....	3.077	47.50
4817	8837	Howard R. Tuttle.....	Quinter.....	3.255	38.75
4847	8982	Ralph G. Schellack.....	Galena.....	2.340	55.00
4968	8959	Shufeldes' Pharmacy.....	Wichita.....	3.370	42.50
4969	8959	Thomas Arnold.....	Wichita.....	3.625	45.00

* A sample of tincture of digitalis made in this laboratory was found to contain 3.88 grammes of extractive in 100 cc. and 45 per cent of alcohol.

TINCTURE OF NUX VOMICA.*

Lab. No.	Insp. No.	NAME.	City.	Gms. strychnine in 100 cc.	Remarks.
4767	8809	H. E. Isaacson.....	Clyde.....	0.076	Below standard.
4778	8781	Hubbard's Drug Store.....	Liberal.....	.068	"
4801	8821	M. G. Reed.....	Cuba.....	.118	Made from fl. ex., passed.
4819	8839	Ellis Mercantile Co.....	Ellis.....	.090	Made from P. D. & Co.'s fl. ex., passed.
4822	8842	C. A. Harkness.....	Hays.....	.065	Made from Wyeth's fl. ex., passed.
4853	8888	Roy G. Berthoff.....	Cherokee.....	.120	Passed.
4854	8889	Nichol's Drug Co.....	Coffeyville.....	.096	"
4949	8951	J. R. Eson.....	Altoona.....	.091	"
4969	8960	Oxley Drug Co.....	Wichita.....	.091	"
4960	8961	Davis Drug Co.....	Wichita.....	.096	"
4971	8971	Johnson Drug Store.....	Sedgwick.....	.087	Below standard.

* Tincture of nux vomica should contain 0.1 gm. strychnine in 100 cc. of the tincture.

SOAP LINIMENT.*

Lab. No.	Insp. No.	NAME.	City.	Specific gravity.	Gms. camphor.	Gms. soap.	Remarks.
4982	8974	Geo. W. Kates.....	Newton.....	.8838	4.30	2.21	Not clear.
4983	8975	E. E. Conrad.....	".....	.8764	4.43	5.395	"
4984	8976	J. B. Dickey.....	".....	.8668	0.00	37.008	Misbranded.
4985	8977	Chas. Johnson.....	".....	.8795	4.50	6.573	Passed.
4986	8978	John Reese.....	".....	.8788	4.50	5.751	"
4987	8979	E. E. Bloom & Co.....	Hutchinson.....	.8710	5.61	5.84	"
4988	8980	Hedges & Adams.....	".....	.8766	4.755	5.527	"
4989	8981	Briggs Bros.....	".....	.9035	4.19	3.095	Below standard.
4990	8982	A. & A. Drug Co.....	".....	.8820	4.30	5.78	Passed.
4991	8983	Duval's Pharmacy.....	".....	.8818	2.58	3.407	Below standard.
4992	8984	A. & A. Drug Co.....	Starling.....	.9062	2.62	2.843	"
4993	8985	J. W. Duff.....	".....	.8720	4.56	5.565	Passed.
4994	8986	Wharton Pharmacy.....	Lyons.....	.8747	4.62	5.95	"
4995	8987	Lyons Drug Co.....	".....	.8812	4.51	5.65	"
4996	8988	J. E. Smith.....	".....	.8820	3.87	5.66	Below standard.
4997	8989	Bixbey & Lindsay.....	McPherson.....	†	4.73	5.64	"
4998	8990	C. H. Hubbell.....	".....	.9105	4.64	5.96	Passed.
4999	8991	C. E. Holmes.....	Great Bend.....	.8829	5.05	1.90	Below standard
5000	8992	A. & A. Drug Co.....	".....	.8827	5.05	1.797	Below standard
5001	8993	Hooper Drug Co.....	".....	.8698	4.51	6.012	Passed.
5002	8994	City Drug Store.....	Ellinwood.....	.8811	4.51	5.68	"
5004	8996	Demain-Powell Phar..	Macksville.....	.9068	3.65	11.07	Adulterated.
5011	2879	G. E. Priest & Son.....	Clay Center.....	.8877	4.51	5.53	Passed.
5022	2890	Louis B. Loeb.....	Junction City.....	.8650	4.94	5.298	"
5013	2881	Palms Drug Store.....	Clay Center.....	.8984	3.719	5.665	Below standard.
5019	2887	L. S. Sargent.....	Junction City.....	.9699	4.51	6.321	Contained considerable sediment. Below standard in alcohol.
5020	2988	Corner Pharmacy.....	Junction City.....	.8819	4.098	5.57	Passed.
5025	2993	Palace Drug Co.....	Ablene.....	.8820	3.82	5.072	Below standard.
5028	2995	Carlin-Supple Phar..	Solomon.....	.9057	2.089	2.712	"
5038	2999	Viaduct Pharmacy.....	Kansas City.....	.9253	3.26	4.98	"
5087	2908	A. T. Long.....	".....	.8989	3.82	4.302	"
5042	2906	W. H. Heaton.....	".....	.8824	3.56	3.859	Below standard
5062	2920	D. G. Jones.....	".....	.9240	3.44	6.00	in camphor.
5064	2932	A. G. Dengel.....	".....	.9240	1.56	4.481	Below standard.
5066	2934	Ivan M. Caldwell.....	".....	.8714	4.51	5.557	Passed.
5077	2945	Chelsea Cash Drug Co.,	".....	.8875	1.655	6.231	Below standard
5078	2946	Geo. Foerlicher, jr.....	".....	.8900	4.51	5.953	in camphor.
5087	2955	C. F. Molloy.....	".....	.8738	4.90	3.117	Passed.
5097	2955	Burns & Scovill.....	".....	.8824	4.60	4.787	"
5099	2967	Meadearis Drug Co.....	".....	.9044	3.87	3.694	Below standard.
5114	2982	Joseph Paradowsky.....	".....	.8984	7.202	3.560	Above standard.
5115	2983	O. W. Klee.....	".....	.8875	4.085	4.74	Below standard.

* Specific gravity should be from 0.8748 to 0.8852; camphor, 4.5 gms. in 100 cc.; soap, from 5.5 to 6 gms. in 100 cc.

† Sample had gelatinized completely.

TINCTURE OF ACONITE.*

Lab. No.	Insp. No.	NAME.	City.	Gms. aconitine.	Remarks.
4923	8848	M. R. Smith.....	Russell.....	0.033	Below standard.
4940	8870	M. J. Kane.....	Scammon.....	.026	Made from fl. ex., below standard.
4960	8895	Mecca Drug Co.....	Coffeyville.....	.039	Below standard.
4964	8899	Howell Pharmacy.....	".....	.0275	"
4982	8918	F. W. Butler.....	Yates Center.....	.038	"
4904	8860	W. J. Briggs.....	Burlington.....	.017	"
4986	8938	Gooch & Edmundson.....	Mapleton.....	.049	Passed.
4944	8846	W. W. Morris.....	Eureka.....	.039	Below standard.
4948	8850	F. C. Broderick.....	Sewery.....	.023	"
4965	8868	Cole & Thomas.....	Wichita.....	.041	Passed.
4970	8870	Elk Drug Co.....	".....	.037	Below standard.

* Tincture of aconite should contain 0.045 gms. of aconitine in 100 cc. of the tincture.

GLYCERIN.*

Lab. No.	Insp. No.	NAME.	City.	Specific gravity.	Remarks.
4794	8814	Kent-Long Drug Co.....	Beloit.....	1.248	Slightly brownish; U. S. P.
4838	8868	Roll Lindburg.....	Pittsburg.....	1.249	U. S. P.
4841	8871	Markham Drug Co.....	Scammon.....	1.250	"
4848	8883	E. E. Wheeler.....	Galena.....	1.247	"
4851	8886	Burke Bros.....	Mineral.....	1.249	Gave tests for acrolein.
4859	8894	Slosson Drug Co.....	Coffeyville.....	1.250	U. S. P.
4873	8908	F. C. Oehler.....	Cherryvale.....	1.248	Light brownish; gave tests for acrolein.
4885	8911	Chas. B. Spencer & Co.....	Iola.....	1.249	U. S. P.
4898	8919	Johnson Drug Co.....	Yates Center.....	1.248	"

* Glycerin should have a specific gravity of not less than 1.246 at 25° C., and otherwise prove standard by U. S. P. tests.

ELIXIR OF IRON, QUININE AND STRYCHNINE PHOSPHATES.*

Lab. No.	Insp. No.	NAME.	City.	Specific gravity	Color.	Residue, grms.	Alkaloids.
4857	8892	Gordon-Flores Dg. Co.	Coffeyville.....	1.0858	Nearly normal..	6.0440	.7680
4858	8893	J. S. Lamb & Son.....	"	1.0867	"	4.4540	.8700
4867	8902	F. Clate Fair.....	Independence..	1.0896	Light green....	5.2320	3.480
4869	8904	Hebrank Drug Co.....	"	1.0962	Nearly normal..	3.4020	.6809
4871	8896	Mustard.....	Cherryvale.....	1.0798	"	20.0860	.8700
4894	8920	Hess Drug Co.....	Humboldt.....	1.1223	Brownish tint..	22.9680	.8900
4908	8929	J. A. Moore Drug Co..	Emporia.....	1.0693	Nearly normal..	5.0820	3.460
4905	8931	The W. W. Drug Co..	Burlington.....	1.1056	Light greenish..	27.5600	.6880
4914	8868	Young's Pharmacy....	Parsons.....	1.0856	Nearly normal..	23.2440	1.0140

* Specific gravity should be about 1.0876; color, light yellowish green; residue, 21.6 grammes in 100 cc.; alkaloids, 0.898 grammes in 100 cc.

ESSENCE OF PEPPERMINT.*

Lab. No.	Insp. No.	NAME.	City.	Color.	Cc. of oil	Remarks.
4713	8747	Junction Pharmacy....	Coffeyville.....	Light green..	9.40	Contains 2.6 added water; adulterated.
4771	8774	McEwain's Pharmacy...	Pratt.....	"	8.61	Below standard.
4776	8779	Fannon Drug Co.....	Bucklin.....	Normal.....	8.74	"
4777	8780	Chas. Taylor.....	Liberal.....	"	10.80	Passed.
4790	8783	Rogee's.....	Arlington.....	Light green..	9.50	"
4787	8790	City Drug Store.....	Pawnee Rock...	Dark green..	6.85	Adulterated.
4788	8791	McBride & Needles....	Scott City.....	Normal.....	8.24	Below standard.
4945	8947	C. M. McCaughan.....	El Dorado.....	Light olive green.....	10.00	Passed.
4963	8964	H. B. Allen.....	Wichita.....	Normal.....	8.65	Below standard.

* Essence of peppermint should contain 10 cc. of oil in 100 cc. of essence and should contain no added water.

Lab. No. 4844, Insp. No. 8874. "Tr. of Hyoscyamus." Burke Bros., Columbus and West Mineral. Found to contain 0.0055 gramme of mydriatic alkaloids in 100 cc. Tincture of hyoscyamus should contain 0.007 gramme mydriatic alkaloids in 100 cc. of the tincture.

Lab. No. 4862, Insp. No. 8897. "Fluid Extract of Belladonna." Palace Drug Store, Coffeyville. Sample was found to contain .326 gramme of mydriatic alkaloids in 100 cc. of the tincture. Fluid

extract of belladonna should contain 0.4 gramme of mydriatic alkaloids in 100 cc. of the fluid extract.

Lab. No. 4865, Insp. No. 8900. "Tr. of Belladonna." Junction Drug Store, Coffeyville. Sample was found to contain 0.035 gramme of mydriatic alkaloids in 100 cc. Tincture of belladonna should contain 0.03 gramme of mydriatic alkaloids in 100 cc. of the tincture. Passed.

Lab. No. 4906, Insp. No. 8932. "Tr. of Hyoscyamus." A. F. Holcomb, Garnett. Sample was found to contain 0.0068 gramme of mydriatic alkaloids in 100 cc. of the tincture. Tincture of hyoscyamus should contain 0.007 gramme of mydriatic in 100 cc. of the tincture. Passed.

Lab. No. 4931, Insp. No. 5043. "Dr. Kinsman's Heart Tablets." Tablets weighed, with sugar coating, 0.3782 gramme. With coating removed, 0.1915 gramme. Total alkaloids calculated in terms of strychnine, 0.0029 grammes. Tablets show presence of nitrites.

Lab. No. 4980, Insp. No. 5050. "Watkins' Laxative Wafers." Sent in by Dr. C. Harner, Green, Kan. Wafers were said to have produced symptoms of poisoning. Found to contain phenoiphthalein.

Lab. No. 4981, Insp. No. 5051. "White Dusting Powder." Said to produce symptoms of poisoning. Sent in by Dr. R. C. Harner, Green, Kan. Powder was found to contain acetanilid and boric acid.

Lab. No. 4982, Insp. No. 5052. "Vitality Tablets." Dr. James Rainey, Chicago, Ill. Published formula: Ova testa, lecithin, iron, quinine and nux vomica. Tablets weigh 0.2575 gramme. Weight of total alkaloids in one tablet, 0.0215. Weight of iron calculated as ferric oxide, 0.0512 gramme to each tablet.

Lab. No. 5005, Insp. No. 9000. "Quinine Hair Tonic." Winsor Chemical Company, Kansas City, Mo. Alcohol declared, 20 per cent. Alcohol found, 17 per cent. No quinine was detected. Misbranded.

Lab. No. 5012, Insp. No. 2880. "Sweet Spirit of Nitre." Thomas Gowenlock, Clay Center. Sample was found to contain 1.24 per cent of ethyl nitrite. Sample was dispensed in transparent bottle. Sweet spirit of nitre should contain 4 per cent of ethyl nitrite. Below standard.

Lab. No. 5055, Insp. No. 7863. "Duseldorfer Mustard." Otto Kuehne Preserving Company, Topeka and Denver. Sample was examined for presence of turmeric. Passed.

Lab. No. 5008, Insp. No. 5054. "Yale Brand Imitation Straw-

berry." Steinwender Stoffregen Coffee Company. Examined for artificial coloring. Passed.

Lab. No. 4937, Insp. No. 8939. "Spirit Camphor." United Drug Company, Pleasanton. Broken in transit.

Eggs.

At a meeting recently held with the car-lot egg shippers of Kansas and representatives of the State Board of Health, it was agreed that on or before June 1 all eggs sold or offered for sale should be on the "loss off" basis. In other words, that on or before June 1 every dealer in this state shall purchase eggs only after they have been candled, and all eggs unfit for food be thus eliminated and the loss sustained by the seller.

Warning placards have been sent to dealers and posted throughout the state, and the inspectors of the department instructed to vigorously enforce the law.

The department expresses the hope that dealers may enter into a hearty coöperation in these measures, and thus the standard and value of the Kansas egg be thereby increased.

SUGGESTIONS FOR FARMERS.

Provide plenty of clean, dry nests for your hens.

Gather the eggs daily in cool weather and twice a day in hot or rainy weather.

Do not wash eggs. Use the dirty and small eggs at home.

Keep your eggs in a cool, dry place, which is free from odors.

Don't sell eggs which have been in an incubator.

Market your eggs daily if possible, if not every other day.

Don't sell eggs which were found in a stolen nest.

Keep the eggs out of the sun when taking them to town.

Don't keep eggs near oil, onions, etc.; they absorb odors.

The physical as well as the chemical composition of air must be taken into account from a standpoint of proper ventilation.

Moderate eating of a mixed diet, with plenty of pure, cool (not ice-cold) water, and a sweet temper, is best suited for hot weather.

Every case of preventable blindness costs the state to educate, \$4500 in excess of the normal cost of education of those in our public schools, which illustrates the economies of ophthalmia neonatorum control.

CIGARETS.

By COLONEL WILLIAM C. HUNTER.

We cannot call to mind a single instance where the habitual cigaret smoker got to the top of the ladder and held his position. We see heads of large establishments smoke cigarets, but the habit was acquired after the position was attained.

The cigaret smoker suffers from lapses of memory, his nerves are shattered, his judgment is not good, he forgets things and is irritable. He cannot hope to compete with the clear-brained individual who does not smoke cigarets.

It is not the cigaret itself that does the harm, it is the smoke inhaled into the delicate lung tissue. This smoke covers the lungs with yellow nicotine, carbon and poisonous gases.

Some men smoke pipes because they wish to escape the criticism to which the cigaret smoker is subject. The pipe smoker who inhales does himself more injury than the cigaret smoker who inhales, because the pipe smoker takes in more smoke.

Go to the medical college dissecting room and see the lungs of a man who inhaled smoke and you will quit the habit if you have been guilty.

Don't burn your lungs with cigaret smoke, or pipe smoke either.

The fight to get to the front is hard enough anyway, and if you want to win do not poison your blood with tobacco smoke.

BULLETIN

OF THE

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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DEACON, Registrar.

No. 8.

AUGUST, 1911.

VOL. VII

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The game is worth while.

The best guide for proper dress is the weather.

Most of the summer diarrheas of children are preventable.

Nothing so helpless yet so precious in all the world—a baby.

Why depend on the typhoid fly to do your scavenging? Clean
up.

Heroism is that quality of character that attempts the difficult
or dangerous, and is devoid of selfishness and foolishness.—*Reverend McBride.*

THE ROLLER TOWEL.

Roll on, thou stiff and dark old towel—roll!

A hundred hands are wiped on thee each day;

Thou bearest mystic records, like a scroll,

And finger prints of all who passed thy way;

And where be those that said thou shouldst not stay;

The New York traveling men who bade thee hence,

The Kansas people, who did sternly say,

“Each his own towel—count not the expense.”

They pass—but thou still roll'st thy length immense.

—*Judge.*

VITAL STATISTICS

Reported to the Kansas Board of Health for July, 1911.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.	
	Cases....	Deaths..	Cases....	Deaths..	Cases....	Deaths..	Cases....	Deaths..	Cases....	Deaths..	Cases....	Deaths..
The State... totals,	261	64	231	83	20	2	23	1	74	10	71	0
July, 1910.....	247	40	127	24	35	2	43	1	43	0	146	0
Allen.....	1	1	0	2	0	0	0	0	0	0	0	0
Anderson.....	0	0	0	0	0	0	0	0	0	0	0	0
Atchison.....	0	0	0	0	0	0	0	0	0	0	0	0
Barber.....	0	0	1	0	0	0	0	0	0	0	0	0
Barton.....	0	0	0	0	0	0	2	0	0	0	0	0
Bourbon.....	0	0	0	0	0	0	0	0	0	0	0	0
Brown.....	0	0	0	0	0	0	0	0	0	0	0	0
Butler.....	0	0	4	0	0	0	0	0	0	0	0	0
Chase.....	1	0	1	0	0	0	0	0	0	0	0	0
Chautauqua.....	0	0	0	0	0	0	0	0	0	0	0	0
Cherokee.....	2	0	1	1	0	0	0	0	0	0	0	0
Cheyenne.....	0	1	0	0	0	0	0	0	0	0	0	0
Clark.....	1	1	0	0	0	0	0	0	1	0	0	0
Clay.....	0	0	0	0	0	0	0	0	0	0	0	0
Cloud.....	0	0	0	0	0	0	0	0	0	0	0	0
Coffey.....	0	0	5	0	0	0	0	0	0	0	0	0
Comanche.....	1	2	0	0	0	0	0	0	0	0	0	0
Cowley.....	0	0	1	1	0	0	0	0	0	0	0	0
Crawford.....	0	0	0	0	2	0	1	0	0	0	4	0
Decatur.....	0	0	0	0	0	0	0	0	0	0	0	0
Dickinson.....	0	0	1	1	0	0	0	0	0	0	1	0
Doniphan.....	0	0	0	0	0	0	0	0	0	0	0	0
Douglas.....	2	2	7	2	0	0	1	1	2	0	0	0
Edwards.....	0	0	0	1	0	0	2	0	0	0	0	0
Elk.....	0	0	5	0	0	0	0	0	0	0	0	0
Ellis.....	1	1	0	0	0	0	0	0	0	0	0	0
Ellsworth.....	1	1	0	0	0	0	0	0	0	0	0	0
Finney.....	1	0	1	0	0	0	0	0	0	0	0	0
Ford.....	1	1	1	1	0	0	0	0	0	0	0	0
Franklin.....	1	1	1	1	0	0	0	0	0	0	0	0
Geary.....	0	0	1	0	0	0	0	0	0	0	0	0
Gove.....	0	0	0	0	0	0	1	0	0	0	0	0
Graham.....	0	0	0	0	0	0	0	0	0	0	0	0
Grant.....	0	0	0	0	0	0	0	0	0	0	0	0
Gray.....	0	0	2	0	0	0	0	0	0	0	0	0
Greeley.....	0	0	0	0	0	0	0	0	0	0	0	0
Greenwood.....	2	2	10	0	0	0	4	0	0	0	0	0
Hamilton.....	0	0	0	0	1	0	0	0	0	0	0	0
Harper.....	0	0	0	0	0	0	0	0	0	0	0	0
Harvey.....	0	0	4	1	0	0	0	0	10	0	1	0
Haskell.....	0	0	0	0	0	0	0	0	0	0	0	0
Hodgeman.....	0	0	2	0	0	0	0	0	0	0	0	0
Jackson.....	1	1	2	1	0	0	1	0	0	0	0	0
Jefferson.....	1	0	0	0	0	0	0	0	6	0	0	0
Jewell.....	2	0	3	0	0	0	0	0	5	0	0	0
Johnson.....	0	0	0	0	0	0	1	0	0	0	0	0
Kearny.....	1	0	5	0	1	0	0	0	1	0	0	0
Kingman.....	0	0	0	0	0	0	0	0	0	0	0	0
Kiowa.....	0	0	0	0	0	0	0	0	0	0	0	0
Labette.....	1	0	14	2	0	0	0	0	5	0	0	0
Lane.....	0	0	0	0	0	0	0	0	0	0	0	0
Leavenworth.....	0	0	0	0	0	0	0	0	0	0	0	0
Lincoln.....	0	0	1	0	0	0	0	0	0	0	0	0
Linn.....	0	0	0	0	0	0	0	0	0	0	0	0
Logan.....	0	0	0	1	0	0	0	0	0	0	0	0
Lyon.....	0	0	20	0	1	0	1	0	2	0	0	0
Marion.....	0	0	3	0	1	0	0	0	0	0	2	0
Marshall.....	0	0	0	0	0	0	0	0	0	0	0	0
McPherson.....	0	0	5	2	1	1	0	0	0	0	0	0

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
Menard	0	0	0	0	0	0	0	0	0	0	0	0
Miami	2	2	1	1	0	0	0	0	0	0	0	0
Mitchell	0	0	0	0	0	0	0	0	0	0	0	0
Montgomery	4	2	2	1	2	2	0	0	0	0	10	0
Morris	1	0	2	0	0	0	0	0	0	0	0	0
Morton												
Nemaha												
Ness	4	2	4	2	0	0	0	0	0	0	0	0
Nesbitt	1	1	1	0	0	0	0	0	0	0	0	0
Norton	2	1	2	0	0	0	0	0	0	0	0	0
Osage	0	0	0	0	0	0	0	0	0	0	0	0
Osborne	1	0	0	0	1	0	0	0	0	0	0	0
Ottawa	0	0	2	0	0	0	0	0	0	0	6	0
Pawnee	0	0	3	0	1	0	0	0	0	0	0	0
Phillips	0	0	0	0	0	0	0	0	0	0	0	0
Pottawatomie												
Pratt	2	0	11	0	0	0	0	0	0	0	0	0
Rawlins	0	0	0	0	0	0	0	0	0	0	0	0
Remond												
Republic	1	0	2	0	1	0	0	0	0	0	0	0
Rice	0	0	0	0	0	0	0	0	0	0	0	0
Riley	2	2	2	0	0	0	1	0	0	0	12	0
Rooks	0	0	0	0	0	0	0	0	0	0	0	0
Rush	1	0	2	0	0	0	0	0	0	0	16	0
Russell	0	0	2	0	0	0	0	0	0	0	2	0
Saline												
Scott	0	0	0	0	0	0	0	0	0	0	0	0
Sedgewick	0	0	1	0	0	0	0	0	0	0	0	0
Seward	0	0	0	0	0	0	1	1	0	0	0	0
Shawnee	1	1	0	0	0	0	0	0	5	0	0	0
Sheridan	0	0	0	0	0	0	0	0	0	0	0	0
Sherman	0	0	2	0	0	0	0	0	0	0	0	0
Smith												
Stafford	0	0	4	0	0	0	0	0	0	0	2	0
Stanton												
Stevens	0	0	0	0	0	0	0	0	0	0	0	0
Sumner	0	0	12	0	0	0	0	0	0	0	5	0
Thomas												
Trego	0	0	0	0	0	0	0	0	0	0	0	0
Wabasha												
Wallace	0	0	2	0	0	0	0	0	0	0	0	0
Washington	0	0	0	0	0	0	0	0	0	0	0	0
Wichita												
Wilson	0	0	2	0	1	0	0	0	0	0	0	0
Woodson												
Wyandotte	2	2	6	0	0	0	0	0	0	0	0	0
Cities:												
Atchison	0	0	0	0	0	0	0	0	0	0	0	0
Coffeyville	1	0	2	0	0	0	0	0	0	0	0	0
Hutchinson	1	0	10	1	1	0	0	0	0	0	0	0
Fort Scott	2	1	4	0	1	0	0	0	0	0	0	0
Kansas City	8	18	18	10	5	1	0	0	0	0	3	0
Leavenworth												
Parsons												
Pittsburg	0	0	1	0	0	0	0	0	2	0	0	0
Topeka	5	5	0	0	0	0	0	0	22	10	0	0
Wichita	8	6	12	2	1	0	1	0	4	0	1	0
State Institutions	184	8	2	1	0	0	0	0	0	0	0	0

* No report.

The experience of over one hundred years has proven the value of vaccination to prevent smallpox, and during that time has saved millions of human lives. No other medical fact in all medical history is so well proven.

An Emergency Hypochlorite Plant.

By W. C. HOAD, Engineer State Board of Health.

The State Board of Health now has a portable plant for the treating of municipal water supplies with calcium hypochlorite. It consists essentially of three substantial oak barrels, a specially designed orifice box, and the necessary valves and connections. A general view of the plant is shown in the drawing on the opposite page, together with enlarged details of the orifice box and standard connections.

In operating the plant a calculated amount of the calcium hypochlorite is first dissolved in the mixing barrel and the solution is then drawn off into one of the solution barrels. This is done by gravity, as shown in the general view in the drawing, if circumstances permit; if lack of space renders this arrangement impossible, the mixing barrel is set on the floor and the prepared solution is pumped into the solution barrel by means of a small hand force pump, not shown in the drawing. The outlet connection to the solution barrel is then opened and the solution flows into the orifice box, where it is maintained at a constant level by the float valve. The pet cock at the outlet of the orifice box is then opened sufficiently to permit the required rate of outflow, this being adjusted by testing with a glass graduate. The solution thus measured out falls into a funnel, from which it is carried to the water supply through a suitable pipe. While the first barrel of the solution is being drawn off, a second charge is dissolved in the mixing barrel and run into the second solution barrel, to be used in turn.

It is expected that this plant will be held at the office of the engineer, at Lawrence, for emergency use over the state in connection with threatened or actual infection of public water supplies. The plant is capable of treating with hypochlorite any city water supply in the state.

A supply of hypochlorite is kept in jugs at the sanitary laboratory for immediate use. The plan is, should a water supply become infected, to ship the hypochlorite plant to the city threatened, set it up and begin at once to sterilize the supply. The plant would be accompanied by some one from the office of the State Board of Health, who would set it up properly and instruct the attendant in its use, or would remain during the entire treatment of the water should this be necessary. A sufficient quantity of hypochlorite would be taken along to insure the continuous opera-

tion of the plant until more could be received by direct order from the city. It is not expected that the plant will be loaned to any city indefinitely, the intention being to hold it in readiness for such emergency services as may be required.

Notice to Physicians and Health Officers.

The law passed by the last legislature known as the "Vital Statistics Law" is now in operation. By the provisions of the law all births and deaths must be registered with the local registrar (who is the city clerk) in the district in which they occur; no further reports of births and deaths by health officers should be made to the State Department of Health.

Physicians should be prompt in making their reports to the local registrar, and if not already registered with him to do so at once. Local registrars have been instructed to enforce the law without fear or favor. **WE MUST AND WILL HAVE ACCURATE STATISTICS IN KANSAS. We must be in the "REGISTRATION AREA."**

Reports of contagious diseases will be made through the local health officers as heretofore.

Cost of Our Preventable Diseases.

A man's life is his capital. What he earns is his interest on his capital. Then suppose a man works 300 days in a year, at \$1.25 a day, and that his money thus earned, \$375 a year, represents 5 per cent on his capital, which on that basis would amount to \$7500; then multiply this by 150,000 for tuberculosis, 30,000 for typhoid, and so on through the list which foots up to a quarter of a million and add it all together, and you will only have begun. You are to add to this the loss of productive energy of something like 700,000 constantly ill for a whole year with tuberculosis, and nearly half that number ill for 60 days from typhoid, and so on through the list, at \$1.25 a day for each one. Then ignoring the fact that the lives of many are worth thousands and hundreds of thousands of dollars a year, exclude the non-producers—women, children and dependents—by dividing the result by two; then still to be on the safe side, divide the result again by two, and the remaining figure, if translated into coin of the realm and placed in our national treasury, would not only pay for a properly equipped national department of public health, but in addition would pay the current expenses of the army and navy, duplicate our armament on the seas, fortify our coasts, deepen our inland waterways, and in ten years would pay for the Panama canal and wipe out our national debt.—*Dr. Charles A. L. Reed.*

Anti-typhoid Inoculation as Introduced into Certain Training Schools for Nurses in Massachusetts.

By MARK WYMAN RICHARDSON, M. D., Secretary of the State Board of Health of Massachusetts, and LESLIE H. SPOONER, M. D., Boston, Mass.

(From the Massachusetts Health Bulletin.)

The subject of typhoid fever at the Massachusetts General Hospital, with especial relation to its bacteriology and its immunity, had been the chief study of one of the writers (M. W. R.) for twelve years, when in 1909 it was decided to make a beginning, at least, with an investigation of specific anti-typhoid inoculation as a method of prophylaxis against the disease.

Experiments with specific sera, filtrates, residues and vaccines had not led to any very remarkable results in the treatment of the declared disease, although the use of these products for the possible prevention of relapses and recrudescences had given results of a distinctly encouraging character. There seemed, however, good reason to believe, especially, through the observations of Wright upon the British troops, that in prophylaxis, specific inoculation might have a field peculiarly successful. The unusual incidence of the disease among nurses had also been noted.

Joslin and Overlander¹ had found that "during the years 1902-'06, inclusive, 26 nurses contracted typhoid fever while working in six hospitals. The average number of nurses employed each year in these hospitals was 322, and the total number of cases under their charge, 2988. In other words, for each 114 cases of typhoid fever treated, 1 nurse came down with the disease. The typhoid morbidity rate for the nurses in these same hospitals was 161 per 10,000 living, instead of 20 per 10,000 living, which is approximately the typhoid morbidity rate for the whole population of the state."

As a result these investigators concluded that "the hospital nurse in Massachusetts is about eight times as liable to contract typhoid fever as the ordinary citizen."

Dr. Spooner² also, at my suggestion, looked up the cases at the Massachusetts General Hospital, and found that, for the ten years previous to 1909, anywhere from 2 to 6 of the nurses had come down annually with typhoid fever.

In view of these facts it was natural, therefore, that in inaugurating the use of specific inoculation appeal should be made first to the members of training schools for nurses. A start was made at the Massachusetts General Hospital in 1909. The nurses were called together and the situation was placed before them in brief. A call for volunteers was then made and met with unexpected success. The work thus begun at the Massachusetts General Hospital has been continued along similar lines at nine other institutions. The inoculating has been done generally by locally interested physicians under the direction of one of us (L. H. S.)

1. Boston Medical and Surgical Journal, vol. 157, page 427, September 26, 1907.

2. American Journal of Public Hygiene, August, 1909.

Indeed, the interest and coöperation of the hospital authorities and local physicians have been most hearty, and it gives me great pleasure publicly to acknowledge this fact, for without this coöperation no progress could have been made. The following table shows the institutions which have adopted the procedure and the number of individuals inoculated:

Hospital.	Inoculator.	No. of cases.
Massachusetts General Hospital.....	L. H. Spooner, M. D.....	153
State Infirmary at Tewksbury.....	H. R. Coburn, M. D.....	56
Waltham Hospital.....	R. E. Wilson, M. D.....	82
Salem Hospital.....	A. N. Sargent, M. D.....	24
New England Hospital for Women.....	M. E. Morse, M. D.....	12
Children's Hospital.....	W. P. Lucas, M. D.....	10
Boston State Hospital.....	M. M. Canavan, M. D.....	40
Danvers State Hospital.....	H. M. Adler, M. D.....	10
Brockton Hospital.....	A. L. Beals, M. D.....	17
Worcester Memorial Hospital.....	E. B. Bigelow, M. D.....	19
Miscellaneous cases.....	L. H. Spooner, M. D.....	32
Total.....		405

As regards the preparation of the vaccines, the following points are of interest.

The culture used has been an old stock culture, and one utilized for a number of years in the laboratory for the making of Widal reactions. The organisms are grown on agar, suspended in salt solution, heated to 53 degrees C. for one hour, and counted with the use of a Zeiss blood platelet counter. Lysol, $\frac{1}{4}$ of 1 per cent, is added to prevent the growth of any accidental contaminating organisms. The inoculations are given on the outer surface of the left upper arm, at the insertion of the deltoid muscle.

The number of inoculations given has been four, at five-day intervals. In the beginning the initial dose was placed at 50,000,000 and increased gradually up to a maximum of 200,000,000. In the more recent series we have increased the dose so that, although the initial dose is still 50,000,000, the maximum is now 300,000,000 or 400,000,000. The local and general reactions experienced by the individuals inoculated have varied in severity. The experience among those inoculated at the Massachusetts General Hospital was approximately as follows:

Ninety per cent showed at most a very slight reaction and 10 per cent showed a moderate reaction. In only one instance was it necessary for a nurse to give up her accustomed duties, and then only for a period of twelve hours. The specific effect of the inoculations upon the blood reactions, as previously reported, was as follows:

Out of the first 100 cases inoculated at the Massachusetts General Hospital 94.2 per cent developed in their blood an agglutinative strength of 1 to 25, and 80.6 per cent showed a strength of at least 1 to 50.

In contrast to the experience of the ten previous years, 1909 and 1910 have shown no cases of typhoid fever among the nurses at the Massachusetts General Hospital, unless the following instance may be considered a typhoidal infection:

A nurse who had received regular inoculations ten months previously suffered from an illness characterized by a temperature of 101.8 degrees and all the symptoms of acute but mild infection. Physical examination,

as well as bacteriological investigation of the blood and feces, was negative. The agglutination test, however, was positive at first in a dilution of 1 to 100, and two days later in a dilution of 1 to 200. Her temperature fell to normal on the third day and remained so. In looking back over the history of this case, it seems that two weeks after her series of inoculations, ten months previously, the agglutinative strength of her blood was 1 to 100. Whether the increased agglutinative strength on the third day in the subsequent infection can be regarded as a sufficient evidence for the diagnosis of typhoid fever must be considered doubtful. Even if we admit, however, that this case was one of typhoid fever, its extreme mildness is suggestive. Curiously enough the same individual is now suffering from an attack of measles, and the blood shows once more a typhoid reaction in a dilution of 1 to 100.

Among the individuals inoculated in hospitals other than the Massachusetts General Hospital it is stated that local or general reactions were absent or slight in 83 per cent of the cases, of moderate severity in 13 per cent, and more severe in 4 per cent. Agglutination tests were not performed in all cases, but those in which the blood was investigated showed strengths ranging from 1 to 50 to 1 to 600.

Among the nurses inoculated in hospitals other than the Massachusetts General Hospital two cases of typhoid fever have developed. The first case showed its earliest symptoms shortly after the first inoculation had been given. Mild fever was present for two weeks and convalescence is now in progress. In this hospital an epidemic among the nurses was already in progress, and there can be little doubt that this nurse received her first inoculation during the incubation period.

The second case presents many points of interest. The patient was a woman who had been nursing two cases very sick with typhoid fever. Both were extremely delirious, absolutely incontinent, and both subsequently died. The attending nurse received three inoculations with a vaccine similar to that used upon 18 of her associates. None of the inoculations produced more than a slight reaction. Thirteen days after her first inoculation, however, and three days after her last inoculation she first showed signs of a mild typhoid infection. Her temperature, however, never exceeded 102.5 degrees, and she suffered no interruptions in her convalescence. It seems reasonable to suppose that this nurse also was inoculated during the incubation period of the disease. In view of the fact that she was probably infected with organisms which were responsible for the death of two other individuals, it may not be entirely unreasonable to assume that the severity of her infection was attenuated by the inoculations which she received. In any case, these two histories serve very well to demonstrate that there is no danger in inoculating those individuals who in the near future are likely to be exposed to infection. In other words, the danger to be apprehended by what was designated by Wright as the negative phase of immunity said to follow bacterial inoculation seems to have no substantial basis in fact. The practical importance of this observation lies in the fact that, in the presence of a local epidemic of typhoid fever, widespread inoculation might be advised and carried out without fear that the individuals in-

oculated would thereby be made more susceptible to the disease than before.

As previously stated, the local and general reactions following inoculation are in the majority of individuals inconsiderable. It has been the experience, however, of one of us (L. H. S.) that latent or chronic foci of infection of non-typhoidal character may be lighted up by the typhoid inoculations. There were four such instances. First, chronic infectious arthritis of the knees; second, subacute urethritis; third, chronic infectious arthritis of the ankles, associated with flat foot; and fourth, chronic cholecystitis. No permanent damage was done, to be sure, but these recrudescences, by their temporary discomfort and inconvenience, were sufficient to make precautions advisable. Before inoculation, therefore, it is best to inquire somewhat into the previous history in search of old or latent infections, and to refuse to inoculate all persons showing a temperature over 99 degrees.

In this connection it is interesting to note that just as latent infections seem to be rendered acute temporarily by typhoid inoculation, so it has also been observed that a typhoid agglutination reaction, when once established in the body by specific inoculation, may be stimulated to reappearance by other infectious processes. Four instances have been seen in which strong agglutination strengths have been found in the blood long after inoculation, and associated with such diseases as grippe, tonsillitis, pleuropneumonia and measles.

Our experience, therefore, covers 1588 inoculations practiced upon 405 individuals. As yet there have been no untoward results, and we believe that the inoculated individuals have acquired an increased resistance to typhoid infection which will last them for several years at least. We expect in the coming year to extend the influence of these inoculations, especially among nurses and others attendant upon the sick. Furthermore, we have strong faith that the procedure will, within a short time, find increasing favor with the general public, which, exposed as it is to many sources of infection, is in great need of specific protection.

Registrar Notes.

Births and deaths must be registered in the district where they occur.

Burial permits should be returned to the local registrar. The printing on the blanks is in error.

Where there is no regular sexton in charge of a cemetery, the person who receives the money for the lots or graves would be the proper person to keep the records required by law.

Where no regular undertaker is employed to care for the remains of a decedent, the person who does make the interment is acting as undertaker, and as such is responsible for the fulfillment of the requirements of the law.

Smallpox and Vaccination in the Philippine Islands.

By VICTOR G. HEISER, Passed Assistant Surgeon, United States Public Health and Marine Hospital Service, Chief Quarantine Officer and Director of Health for the Philippine Islands, and ROBERT OLESON, Assistant Surgeon, United States Public Health and Marine Hospital Service.

(From the "Public Health Reports," Vol. XXVI, No. 10, 1911.)

At probably no time in the world's history has the efficiency of vaccination as a preventive for smallpox been so conclusively and effectively demonstrated as in the Philippine Islands since American occupation.

The evidence of its value is incontestible.

During Spanish times it was necessary, each year during the dry season, to erect in Manila a large temporary hospital, to which the many hundreds of victims of smallpox could be taken. The great majority of them died.

During the past five years not one person has died in Manila from smallpox who had been successfully vaccinated during the five previous years; nor has any one died of smallpox in Manila since June, 1909.

Since 1907, when the systematic vaccination was completed of the six provinces near Manila, which have an approximate population of 1,000,000, and which from time immemorial had an annual average mortality from smallpox of at least 6000 persons, not one person has died of smallpox who had been successfully vaccinated, and only a few scattering cases have occurred. During the past two years some deaths have been reported, but careful investigation shows that not one death took place in a vaccinated person.

In May, 1904, the United States army transport "Liscum" left Manila with 26 cabin passengers, 170 steerage passengers, 16 officers and 80 members of crew, or a total of 292 souls on board. During the first week smallpox broke out aboard the vessel in an unvaccinated child in the steerage. An examination of the personnel on board showed that 3 members had never been vaccinated. Within a period of two weeks these unvaccinated persons were stricken with the disease, and not one of the 289 remaining persons contracted it.

During October, 1910, information was received that in the remote town of Baler, with a population of 2,417, situated on the east coast of Luzon, smallpox had broken out among the unvaccinated children. There were 100 cases and 27 people had already died. An average of 35 new cases were occurring daily. Through the efforts of the Hon. Manuel Quezon, delegate from the Philippine Islands to the Congress of the United States, the people were induced to submit to vaccination. The number of new infections decreased rapidly, and fourteen days after the last person in that town had been vaccinated, about October 20, no further cases of smallpox occurred.

An accurate estimate of the prevalence of smallpox in the Philippine Islands under the Spanish régime is not available, but judging from the partial reports received from the provinces during the first few years of American occupation the death rate must have been appallingly heavy.

The policy of persistent systematic vaccination, inaugurated twelve

years ago by the American sanitary authorities, has been attended with excellent results.

In the larger cities and easily accessible localities the disease has become mild, relatively infrequent, and death is rare. Severe outbreaks of variola are occasionally reported in some of the remote communities. In these instances, however, it has invariably been found that vaccination has been incomplete. Either it has been impossible to place a potent virus in the field for vaccination, or the people, through ignorance, superstition or willful neglect, have failed to avail themselves of the proven prophylactic advantages of the measure.

In order that the efficiency of protective inoculation may be illustrated, a few of the many successes which have attended the efforts of the bureau of health for the Philippines are here cited.

Through an unfortunate combination of circumstances, vaccination was suspended during a period of nine years in Bagac, an isolated barrio of 2000 inhabitants in the province of Bataan. Being situated on the monsoon-swept China seacoast, the town is accessible by sea only during short seasons. To reach the town overland requires strenuous travel over an exceedingly wretched trail. From 1896 to 1901, when the country was in the throes of war and rebellion, it was impracticable to carry on the work of vaccination, and Bagac was necessarily neglected. Later, protective inoculation was still further delayed by the inability of the provincial physician, through physical infirmity, to reach the town. In 1905 there was a widespread epidemic of smallpox in Bagac. The American physician who investigated the outbreak found that there were one or more cases in every house. Especially noteworthy was the fact that a few persons who had been vaccinated during the Spanish régime remained free from the disease. Within two weeks after the completion of thorough vaccination new cases ceased to appear, and the town remained free from variola thereafter.

That there is a decided difference between the results obtained by desultory vaccination and those obtained from the institution of thorough measures became apparent in the last epidemic in the city of Iloilo. In July, 1909, there occurred 21 deaths from smallpox in that city. As the disease had always existed to a considerable degree, it was difficult to persuade the local sanitary officials to bestir themselves, but after discussing the subject they consented to undertake a complete campaign of vaccination. In August there were 12 deaths, in September 8 and in October 1. Since that time but 1 mild case of varioloid has been recorded in a city which previously had rarely, if ever, been free from variola.

In Pampanga province there were 278 deaths from smallpox in 1904 and 168 in 1905. After vaccination was begun with some degree of regularity the decrease in the ravages of the disease became manifest: 1906, 35 deaths; 1907, 14 deaths; later, to date, no deaths.

During the systematic vaccination of the province of Albay, with a population of 234,000, bitter opposition was encountered in the towns of Tabaco and Malinao. Many people remained away from the towns until after the departure of the vaccinators. The following year 40 deaths from variola occurred in these two localities, the only cases in the entire province. The authorities suppressed the disease by enforced vaccination

of those who had previously escaped, and since then there has been no smallpox in the province.

In January, 1910, the district health officer of Ilocos Sur was summoned to the town of San Esteban to aid in combating an epidemic of smallpox. The work of thorough vaccination began on January 26, after the great majority of cases had developed. The beneficial results were immediately apparent, as shown by the following enumeration of cases:

1910.	Cases.	Deaths.
January	126	29
February	75	22
March	10	6
April	1	1

Subsequently there were no cases. Of the 58 persons who succumbed to smallpox, not one had a vaccination scar, nor did any of the 154 survivors have scars denoting recent successful vaccination. The instance is particularly noteworthy, because attention was directed solely to vaccination. The epidemic occurred in the dry season, climatic and sanitary conditions remaining the same.

That portion of the province of La Union lying north of the town of San Juan was systematically vaccinated in 1905, with the resulting disappearance of smallpox. In the unvaccinated southern part of the province there were yearly outbreaks, even while the northern portion remained free from the disease. Following systematic vaccination, variola was also eradicated from the southern portion, a phenomenon commented upon with amazement by the impressionable people.

After a strenuous campaign of vaccination, as a result of which smallpox was practically eradicated from the province of Ambos Camarines, the authorities sought to eliminate every possible opportunity for the re-appearance of the disease. It was decided that the principal danger was incurred by permitting the 15,000 children who were born annually to remain unprotected. Consequently, four experienced men were employed to make continuous trips through the province, arriving at each locality at least twice a year. These men obtain the birth records and do not leave a community until every infant has been successfully vaccinated.

Attention is also directed to transients. Every newcomer must produce a certificate of recent successful vaccination or submit to the operation. That the efforts of the officials in the Ambos Camarines have been wisely directed is evinced in the following statistics:

	Deaths.
Third quarter, 1906.....	208
Fourth quarter, 1906.....	80
First quarter, 1907.....	8
Later, to date, no deaths.	

Prior to 1905, between 3000 and 4000 deaths from smallpox were reported each year in the province of Cebu. In 1905 and 1906 the systematic vaccination of the 650,000 inhabitants was undertaken. In 1907 there were only 94 deaths, and in 1908 84 deaths from the disease.

As smallpox was apparently on the wane, vaccination was suspended for two years. In the meanwhile there was a decided increase in the number of unprotected people, due to births and immigration from neighboring islands. During 1909 there was a recrudescence of variola, in

which 736 persons lost their lives. Investigation proved that over 90 per cent of all the cases were among unvaccinated children, that no cases were reported among persons recently successfully vaccinated, and that the small number of adults attacked were nearly all unvaccinated. The province has again been thoroughly vaccinated.

In July, 1908, Pangasinan province was swept by an epidemic of cholera, and for a time vaccination was entirely suspended, the vaccinators being made sanitary inspectors and employed in combating the new scourge.

In October, 1908, the cholera having subsided, and a virus having been obtained which gave as high as 90 per cent of successes, vaccination was renewed with vigor. The province has been singularly free from smallpox since the completion of systematic vaccination.

	Cases.	Deaths.
1908.		
First trimester	4,080	2,282
Second trimester	2,136	1,350
Third trimester	501	326
Fourth trimester	218	132
1909.		
First trimester	267	123
Second trimester	254	99
Third trimester	108	48
Fourth trimester	7	3

The problem of eradicating smallpox from the Philippine Islands is one involving the thorough and repeated vaccination of all the people. Until the local sanitary officials understand that infants must be vaccinated shortly after birth, that unprotected transients must submit to the operation, and that all the people must be periodically revaccinated, smallpox will still continue to prevail.

Already notable progress along these lines is being made by the employment of permanent vaccinators.

As improved methods for the preservation of virus are discovered, as facilities for travel are increased, and the people are educated to the true value of protective inoculation, it is not too much to expect that smallpox will be reduced to a negligible minimum.

Registrar Notes.

Disinterments of bodies for removal are not in the hands of local registrars. Permits for disinterments are issued by the State Board of Health direct upon application on the proper blank.

Physicians, undertakers and midwives who are duly registered with the local registrar of the district in which they reside may practice anywhere in the state without further registration.

A burial permit, properly issued, may be accepted by the sexton of any cemetery within reach of a private conveyance, although located outside the district of the registrar issuing the permit.

Many registration districts located adjacent to other counties have asked that the territorial limits of their districts be extended to include part of the adjoining county. This is not possible because the law does not permit it, and, further, it is necessary for statistical purposes that the counties be kept segregated.

State Board of Health Notes.

No hurry; take it coolly.

The presence of flies indicates filth near by.

Milk in which can be seen visible dirt should not be used as a food.

The 'red plague' is almost as great a public menace as the "white plague."

There were those who hooted the idea that the mosquito carried disease, too.

The richest possessions in the world — one good wife and several sweet children.

The greatest blessing in the world — the ability, the desire, the opportunity and the will to work.

Every man should keep a fair-sized cemetery in which to bury the faults of his friends.—*Henry Ward Beecher.*

CHARACTER AND ACTION.

It matters not whether it be an age, a nation, a church, a man; anything which is capable both of being and acting must feel its being behind its acting, must make its acting the expression of its being, or its existence is very unsatisfactory and thin. What does it mean to me that the French Revolution burst out in fury a hundred years ago, unless in that outburst I see the utterance of the whole character of that crushed, wronged, exasperated time, which had gathered into itself the suppressed fury of centuries of selfish despotism? What is it to me that a great reformer arises and sets some old wrong right, unless I see that his coming and the work he does are not mere happy accidents, but the expression of great necessities of human life, and of a condition which mankind has reached by slow development and education? What is your brave act without a brave nature behind it? What is your smile, unless I know that you are kind? What is your indignant blow, unless your heart is on fire? What is all your activity without you? How instantly the impression of a character creates itself, springing into shape behind the deed! A man can not sell you goods across the counter, or drive you a mile in his carriage on the road, or take your ticket on the cars, or hold a door open for you to pass, without your getting, if you are sensitive, some idea of what sort of a man he is, and seeing his deed colored with the complexion of his character.

—PHILLIPS BROOKS.

BULLETIN

OF THE

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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DEACON, Registrar.

No. 9.

SEPTEMBER, 1911.

VOL. VII

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Wash your hands before you eat.

Cool weather does not call for closed windows.

Have you a back-bone, or merely a wish-bone?

To polish the faucet will not purify the water supply.

One of the best of this season's fashions—to get vaccinated against typhoid fever.

Kansas mourns the death of her able congressman, Judge E. H. Madison, of the "Big Seventh" district.

A case of smallpox is nothing short of a disgrace. It could have been prevented by a successful vaccination.

Bad eggs will not be eliminated until all dealers, both large and small, go onto a "candling" or "loss off" basis.

Leprosy in Kansas.

The first known case of leprosy occurring in a citizen of Kansas has developed in Ellis county.

A case in a Mexican laborer, reported from Wichita, several months ago, was deported, he having come to this country while suffering from the disease.

Bacteriological findings confirmed the diagnosis in both these cases.

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
Meade.....	0	0	0	0	0	0	0	0	0	0	0	0
Miami.....	0	0	2	1	0	0	0	0	0	0	0	0
Mitchell.....	0	0	1	0	1	0	0	0	0	0	0	0
Montgomery.....	2	1	13	1	0	0	21	0	0	0	0	0
* Morris.....												
* Morton.....												
Nemaha.....	0	0	0	0	2	0	0	0	0	0	0	0
Neosho.....	0	0	2	0	0	0	0	0	0	0	0	0
Ness.....	0	0	0	0	0	0	0	0	0	0	0	0
Norton.....	0	0	1	0	0	0	0	0	0	0	0	0
Osage.....	0	0	6	0	0	0	0	0	0	0	0	0
Osborne.....	0	0	4	0	1	0	0	0	0	0	0	0
Ottawa.....	0	0	0	0	1	0	0	0	0	0	0	0
Pawnee.....	0	0	4	0	0	0	0	0	0	0	0	0
Phillips.....	0	0	0	0	0	0	0	0	0	0	0	0
* Pottawatomie.....												
Pratt.....	2	0	3	0	0	0	0	0	0	0	0	0
Rawlins.....	1	1	0	0	0	0	0	0	0	0	0	0
* Reno.....												
Republic.....	0	0	5	0	0	0	0	4	0	0	0	0
Rice.....	1	0	1	0	0	0	0	0	0	0	0	0
Riley.....	1	0	4	0	4	1	0	0	0	0	0	0
Books.....	0	0	4	0	4	1	0	0	0	0	0	0
* Rush.....												
Russell.....	0	0	0	0	0	0	0	0	0	0	0	0
Saline.....	1	1	1	0	0	0	0	1	0	0	0	0
Scott.....	0	0	0	0	0	0	0	0	0	0	0	0
Sedgwick.....	0	0	2	0	0	0	0	0	0	0	0	0
Seward.....	0	0	0	0	0	0	1	0	0	0	0	0
Shawnee.....	0	0	0	0	0	0	0	3	0	0	0	0
Sheridan.....	0	0	1	0	0	0	1	0	0	0	0	0
Sherman.....	0	0	1	0	0	0	0	0	0	0	0	0
Smith.....	0	0	0	0	0	0	0	0	0	0	0	0
* Stafford.....												
Stanton.....												
Stevens.....	0	0	0	0	0	0	0	0	0	0	0	0
Sumner.....	1	1	1	0	1	0	1	0	0	0	0	0
Thomas.....	0	0	2	0	0	0	0	0	0	0	0	0
* Trego.....												
* Wabaunsee.....												
Wallace.....	0	0	0	0	0	0	0	0	0	0	7	0
Washington.....	0	0	0	0	0	0	0	0	0	0	0	0
Wichita.....	0	0	12	0	7	0	4	0	0	0	0	0
Wilson.....	0	0	6	0	0	0	0	0	0	0	0	0
Woodson.....	0	0	10	0	0	0	0	0	0	0	0	0
Wyandotte.....	0	0	0	0	0	0	0	0	0	0	0	0
Cities:												
Atchison.....	2	1	0	0	0	0	0	0	0	0	0	0
Coffeyville.....	5	2	4	0	0	0	0	0	0	0	0	0
Hutchinson.....	1	0	25	0	1	0	0	0	0	0	0	0
Fort Scott.....	2	0	0	0	0	0	0	0	0	0	0	0
Kansas City.....	20	0	10	0	4	0	1	0	1	0	2	0
Leavenworth.....	2	0	4	0	1	0	0	0	1	0	0	0
Parsons.....	1	0	0	0	0	0	2	0	0	0	0	0
Pittsburg.....	2	0	0	0	0	0	4	0	0	0	0	0
Topeka.....	0	0	3	0	5	0	4	0	21	6	0	0
* Wichita.....												
State Institutions.	133	0	5	1	0	0	0	0	0	0	0	0

* No report.

As a result of the first two weeks' operation of the new Vital Statistics Law, two physicians suspected of committing criminal abortion are under arrest, and one other is under investigation.

FOOD ANALYSES No. XXXV.

By Prof. E. H. S. BAILEY, Ph. D., Chemist for the State Board of Health, and Asst. Prof. JACKSON, M. S., Food Analyst.

ALCOHOLIC BEVERAGES.

That alcoholic beverages are still sold in Kansas is evidenced by the fact that the food inspectors not infrequently buy them without any intent, on their part, to look for such products. These are usually sold as ciders. Three were reported in June, all over 7 per cent alcohol, and three follow in this report:

No. 9349. Label, "Pure Cider," manufactured by the Monarch Vinegar Works, Kansas City, Mo. Retailer, B. F. Binder, Wa Keeney, Kan. Absolute alcohol by volume 5.73 per cent.

No. 9382. Label, "Apple Cider," manufactured by the National Fruit Products Company, Memphis, Tenn. Retailer, F. L. Shumway, Mayetta, Kan. Jobber, Byron Willcuts, Topeka, Kan. Absolute alcohol by volume 6.93 per cent.

No. 9383. Label, "Apple Cider. Cider made from apple juice sweetened with cane sugar syrup, Immitation Champagne Flavor," manufactured by the Clarksville Cider Company, St. Louis, Mo. Retailer, F. L. Shumway, Mayetta, Kan. Absolute alcohol by volume 5.41 per cent.

"SURE AND PURE."

From time to time there comes to our attention some perfectly common and well-known substance, put up in package or bottle, under some peculiar or striking name, and selling for a price wholly out of proportion to its value when sold under its own name. This month it is known as "Sure and Pure."

The package is a pasteboard box about two inches square and four high, and sells for twenty-five cents at retail. It contains sixteen small envelopes each holding a very little coarse white substance resembling sugar that has a tart flavor. The package also contains a booklet of receipts.

Certain claims are made on the package, extracts from which follow:

"Quality." "A harmless preparation for overcoming the difficulties in making the finest of French cream candies and all kinds of plain and ornamental icing and frosting." "Purity." "Economy." "Makes 100 varieties of candy and all the different icings." "This package of Sure and Pure will make enough frosting for fifteen cakes or ten pounds of the finest French candies or bon-bons, saving both time and money. Sure and Pure

prevents the icing from running or cracking. A child can, by using Sure and Pure, equal old and experienced cake and candy makers in preparing these articles."

It is not the purpose of this note to consider the claims just recited, although one may doubt the statement that some mixture with a striking name will enable a child to equal the results of old and experienced cooks.

A knowledge of the ingredients in Sure and Pure may be of interest. The sixteen envelopes contain a total of 8.32 grams, or slightly less than three-tenths of an ounce avoirdupois. Some envelopes contained nearly three times as much substance as others, and that alone shows its properties are not very definite, yet directions always call for one envelope to one cup of sugar. The white powder is a mixture of granulated sugar and cream of tartar. The proportions of cream of tartar and sugar vary in different packages, but average about twenty per cent cream of tartar and eighty per cent sugar. What is the cost of the ingredients? Three-tenths of an ounce of sugar at six cents a pound is a little over eleven-hundredths of one cent, and eighty per cent of that is nine hundredths (0.09) of one cent. Three-tenths of an ounce of cream of tartar at twenty-five cents a pound (wholesale price) is nearly forty-seven hundredths of one cent, and twenty per cent of that is a trifle over nine hundredths (0.09) of one cent. Adding together the cost of the sugar and the cream of tartar it is seen that the total ingredients in a twenty-five-cent package cost less than two-tenths of one cent.

If the contents were new substances used to attain a certain end there might be some excuse for the sale of the package, but cream of tartar is the substance commonly specified in cook books when making candies, fondants, etc., and cream of tartar costs only forty cents a pound at retail.

VANILLA EXTRACT.

In the absence of quantitative standards for vanilla extract, the following information is published for the benefit of the public, and persons interested may draw their own conclusions from the data pointed out.

During the spring of 1909 thirty-two samples of vanilla extract were made from six varieties of vanilla beans.

Different methods were employed, except that in every case care was exercised to exhaust the sample of beans as completely as possible. The standard for vanilla extract requires each 100 cc. (about three ounces) to contain the soluble matter from not less

than ten grams of vanilla beans. This being then the minimum requirements, that proportion of beans was used in every experiment. The extracts were made with 65, 50, 40, 30 and 20 per cent alcohol, and some were made with glycerine and sugar and some with sugar only, in addition to the alcohol. Some quantitative expression for the material in solution was then sought, and it was found by determining the Winton¹ lead number for vanilla extract,² and it will be hereafter designated as the Winton Basic Lead Number to distinguish it from the Winton Normal Lead Number of Winton and Lott.³

The Winton Basic Lead Numbers found for the above pure, standard extracts of minimum strength were:

Bean used.	Lead No. extremes.	Per cents alcohol in extracts.
Prime Mexican.....	1.60 to 1.68	20, 30, 40, 65.
Mexican Cuts.....	1.82 to 1.91	50 with and without sugar and glycerine.
Ordinary Mexican dry beans.....	1.80 to 1.83	20, 30, 40, 65.
Mexican Cuts dry beans.....	2.00 to 2.10	20, 30, 40.
Bourbon.....	1.55 to 1.68	20, 30, 40, 65.
South American dry beans.....	1.42 to 1.62	20, 30, 40, 65.
Vanillons dry beans.....	1.02	20.

It should be noted that these lead numbers cover all probable percents of alcohol in extracts, and are independent of the per cent of alcohol in the extract, and, further, are closely proportional to the grams of beans used in making the extracts.

To show the latter, three extracts were made and tested as follows:

Bean used.	Lead No.	Grams beans to 100 cc.	Alcohol.
Bourbon.....	0.83 to 0.84	5	65%
Bourbon.....	1.68 to 1.68	10	65%
Bourbon.....	1.79 to 1.80	15	65%

It is probable that in the case of the fifteen grams the alcohol was nearly saturated by ten grams and could take up little more vanilla extractives.

It was afterwards learned that about the time the above work was being done B. H. Smith,⁴ chief of the federal laboratory at Boston, had also applied the very same test to two samples of extracts made in that laboratory from ten grams Mexican beans to 100 cc. with about 49 per cent alcohol in the finished extracts and obtained lead numbers of 1.50 and 1.58. He also obtained lead numbers of 1.51, 1.56, 1.66 on commercial extracts made by reputable manufacturers, using ten grams of beans to 100 cc. of extract.

1. Jour. Am. Chem. Soc., 28, 1204.

2. Jour. Ind. Eng. Chem., 1, 478-9.

3. U. S. Dept. Agr. Bureau of Chem. Bul., 122, p. 109.

4. Communicated by the author.

It would seem from the above that commercial extracts should certainly have a lead number of 150 for the minimum standard extract, and that if they do not they are either made from less than ten grams of beans to each 100 cc. or else are imperfectly extracted, which in either case results in the public not getting a good standard product and in the extract itself being below standard and illegal.

The low lead number of the extract from Vanillons is not to be considered, as that is a coarse, wild bean, unfit for the production of flavoring extracts. As a further means of judging the following extracts, the Winton normal lead number was determined in a number of cases. Since this is an entirely different factor, different and lower values are obtained, but the authors¹ found that, proceeding according to that method, the minimum normal lead numbers for extracts prepared according to the U. S. P., which also requires 10 g. of beans to each 100 cc., is 0.40.

Bearing all the above in mind, it will be seen in the following table that there are a number of very poor extracts on the market in Kansas.

Insp. No.	Manufacturers.	Wnton basic lead No.	Winton normal lead No.	Remarks.
	A reasonable minimum requirement..	1.50	0.40	
8847	Kanopolis Drug Co., Kanopolis, Kan..	0.40	0.02	Sold as vanilla extract.
9229	White Star Med. Co., St. Joseph, Mo..	0.41	0.06	Sold as an imitation.
7781	Fitta Mfg. Co., Pueblo, Colo.....	0.42	.....	Not sold as vanilla extract.
2799	White Star Med. Co., St. Joseph, Mo..	0.45	.....	Sold as an imitation.
9847	The Fitta Mfg. Co., Pueblo, Colo.....	0.50	0.00	Not sold as vanilla extract.
2689	M. M. Fenner Co., Fredonia, N. Y....	0.84	0.05	Not sold as vanilla extract.
1459	Royal Tea and Coffee Co., Emporia, Kan.	1.00	0.22	Sold as vanilla extract.
2725	Parke-Davis & Co., Detroit, Mich....	1.02	0.12	Sold as ex. vanilla with tonka.
7870	Murray & Co., Wichita, Kan.....	1.05	0.41	Sold as vanilla extract.
7689	Pearl Chemical Co., Wichita, Kan....	1.06	.....	Sold as vanilla extract.
2694	Parke-Davis & Co., Detroit, Mich....	1.10	0.20	Sold as concentrated extract vanilla with tonka.
8682	Pierce Bros. & Coleman, Fredonia, Kan.	1.23	.....	Sold as vanilla extract.
9063	For Theo. Poehler Merc. Co., Lawrence, Kan.....	1.27	.....	Sold as vanilla extract.
9244	Steinwender-Steffregen Coffee Co., St. Louis, Mo.....	1.28	.....	Sold as vanilla extract.
9235	For Theo. Poehler Merc. Co., Lawrence, Kan.....	1.32	.....	Sold as vanilla extract.
9198	Watson Durand Casper & Co., Salina, Kan.....	1.32	.....	Sold as vanilla extract.
2808	For Theo. Poehler Merc. Co., Lawrence, Kan.....	1.34	.....	Sold as vanilla extract.
2841	Union Pacific Tea Co., New York, N.Y.	1.34	.....	Sold as vanilla extract.
9055a	Tone Bros., Des Moines, Iowa.....	1.41	.....	Sold as vanilla extract.
7750	Boerner Fry Co., Iowa City, Iowa.....	1.42	.....	Sold as vanilla extract.
9056	Tone Bros., Des Moines, Iowa.....	1.45	0.60	Sold as vanilla extract.
9205	McCord-Kistler Co., Topeka, Kan....	1.45	.....	Sold as vanilla extract.
6861	W. M. Hoyt Co., Chicago, Ill., but misbranded as it claims to be a triple extract.....	1.60	0.68	Sold as vanilla extract.

1. U. S. Dept. Agr. Bureau of Chem. Circ. 66, p. 12.

ADDITIONAL INFORMATION TO THE VANILLA EXTRACTS.

The line should be very sharply drawn between vanilla extracts and all other preparations made to be substituted for it or as an imitation. The purchasing public should clearly understand that nothing but simply "*vanilla extract*" or "*extract of vanilla*" should be bought, if one wishes that substance. All articles labeled flavor of vanilla and vanillin, vanilla flavor with vanillin and coumarin, extract of vanilla with tonka, essence of vanillin, compound vanilla and vanillin, flavor of vanillin, coumarin and vanilla compounded, vanilla flavor compound, and a host of others, are *not* "vanilla extract," no matter what claims, explanations or formulas are given on the label.

Every manufacturer of pure, legal strength extract of vanilla is only too glad to be able to label his product simply "VANILLA EXTRACT." He has to make no explanations, does not state the presence of ingredients such as vanillin, coumarin, sugar color, harmless coloring, caramel, artificial color, and the like.

Nothing is here said about the relative merits of vanilla extract and its host of competitors. We wish simply to draw the line between them, and have the public understand that it is not buying vanilla extract unless it is so labeled, and at present it is fairly certain to get that product when so labeled, without additions, explanations, formulas, etc.

No. 1847. Label, "Vanilla Extract." Retailer, A. W. Wilson, Kanopolis, Kan. Vanilla resins, none. Coumarin, present. Adulterated and misbranded. Illegal.

No. 9229. Label, "White Star Brand Flavor of Vanillin, Coumarin and Vanilla Compounded. Artificially colored." Retailer, Ben Crouse (peddler in wagon). Contains coumarin, vanillin and caramel. No one need mistake this for a vanilla extract.

No. 7761. Label, "Fitts' Blue Ribbon Compound Essence of Vanillin; Alcohol, 20 per cent." Retailer, The People's Store, Kinsley, Kan. By its label and explanatory statements no one need mistake this for a vanilla extract.

No. 2799. Same product as 9229. Retailer, J. C. Whitmer, Nortonville, Kan.

No. 9347. Same product as 7761. Retailer, the Wm. Stimitz Merc. Co., Grainfield, Kan.

No. 2689. Label, "Vanilla Flavor Compound." Retailer, J. T. Manley, Hoyt, Kan. Composed chiefly of vanillin and coumarin. Not a "vanilla flavor compound," but an imitation of vanilla extract. Adulterated and misbranded. Illegal.

No. 1459. Label, "Pure Extract Vanilla." Retailer, A. E. Kraum, Emporia, Kan. This appears to be only slightly more than half strength.

No. 2725. Label, "Extract of Vanilla with Tonka." Contains vanillin, coumarin and caramel; alcohol, 40 per cent. Retailer, W. T. Stevenson, Oberlin, Kan. Adulterated and misbranded. Illegal.

No. 7669. Label, "Pearl Extract Vanilla." Retailer, R. M. Cowley, Wichita, Kan. Vanilla resins, slight.

No. 7670. Label, "Murray's Reliable Extract of Vanilla." Retailer, Murray & Co., Wichita, Kan. Vanilla resins slight.

No. 2694. Label, "Concentrated Extract Vanilla with Tonka." Retailer, B. A. Roy, Dwight, Kan. This is certainly not a "concentrated" extract vanilla with tonka, as it does not come near having the characteristics of the minimum strength pure vanilla extract. Adulterated and misbranded. Illegal.

No. 8682. Label, "Extract of Vanilla." Retailer, Pierce Bros. & Coleman, Fredonia, Kan. Low lead number.

No. 9063. Label, "Banner Brand Extract of Vanilla." Retailer, Wm. Steinbring, Lakeview, Kan. Low lead number.

No. 9244. Label, "Yale Brand Extract of Vanilla." Retailer, C. P. Miller, Carbondale, Kan. Low lead number.

No. 9235. Label, "Banner Brand Vanilla Extract." Retailer, J. A. Drake, Scranton, Kan. Low lead number (same product as 9063).

No. 9198. Label, "Royal Brand Extract of Vanilla." Retailer, W. D. O'Grady, Solomon, Kan. Low lead number.

No. 2803. Label, "Banner Brand Extract of Vanilla." Retailer, I. E. Pippert, Worden, Kan. Low lead number (same product as 9063).

No. 2841. Label, "Sovereign Vanilla Flavoring, made from Vanillin and Vanilla Beans." Retailer, Union Pacific Tea Company, Leavenworth, Kan. Adulterated and misbranded. Illegal.

No. 9055-*a*. Label, "Tone Bros. Regal Vanilla Extract."

No. 7750. Label, "Flavoring Extract of Vanilla." Retailer, E. J. Wilson, Hutchinson, Kan.

No. 9056. Label, "Tone Bros. Reliable Vanilla Extract." Retailer, Forgeson Bros., White City, Kan.

No. 6331. Label, "Fort Dearborn Triple Extract of Vanilla, Absolutely Pure." Retailer, Swartz & Lynn, Soldier, Kan. It is not a "trifle" extract and not an "absolutely pure" one. The examination indicates that it contains some vanilla together with prune juice and caramel.

No. 9205. Label, "Palace Car Brand Vanilla." Retailer, Driesback Bros., Topeka, Kan.

PICKLES. .

It has already been pointed out in a previous BULLETIN that the final date in Kansas for the disposal of pickles containing alum or salts of aluminum was September 1, 1909, which date was an extension from September 1, 1908; nevertheless pickles still contain alum or salts of aluminum, as shown by collections in the latter part of 1910 and the early part of 1911 and reported below:

No. 7756. Label, "Prairie King Brand Spiced Pickles. Contain alum. Serial No. 179." Manufacturer, Wichita Vinegar Works, Wichita. Salts of aluminum present. Illegal.

No. 7888. Label, "Yours Truly Trade Mark Sweet Piccalette." Jobber, The Davis Mercantile Company, Topeka. Retailer, J. C. Lingo, Topeka. Salts of aluminum present. Illegal.

No. 9313. Label, "Prairie King Brand Sweet Pickles." Manufacturer, Wichita Vinegar Works, Wichita. Retailer, J. G. Hart & Co., Alta Vista. Salts of aluminum present. Illegal.

No. 9363. Label, "Williams' Sour Spiced Gherkins." Manufacturer, The Williams Bros. Company, Detroit, Mich. Retailer, C. Tomson & Son, Paxico. Jobber, The Symns Grocery Company, Atchison. Salts of aluminum present. Illegal.

No. 9384. Label, "Orchid Brand Mixed Pickles." Packed for Bittman-Todd Grocery Company, Leavenworth. Retailer, J. H. McNutt, Valley Falls. Salts of aluminum present. Illegal.

No. 9386. Label, "Perfection High Grade Pickles." Manufacturer, Marshall Vinegar Company, Marshalltown, Iowa. Retailer, Lou Houeks, Valley Falls. Salts of aluminum present. Illegal.

No. 9391. Label, "Williams' Sour Spiced Gherkin Pickles. Contain one-fourth of one per cent of aluminum sulphate." Manufacturer, The Williams Bros. Company, Detroit, Mich. Jobber, Ridenour-Baker Grocery Company, Kansas City, Mo. Retailer, L. E. Henkel, Hiawatha. Salts of aluminum present. Illegal.

No. 9394. Label, "Sweet Pickles. Contain one-tenth of one per cent of alum and sodium benzoate." Manufacturer, National Pickle and Canning Company, Branch Dodson-Braun, Kansas City, Mo. Retailer, Mickey Mercantile Company, Morrill. Salts of aluminum present. Illegal.

No. 9394a. Label, "Sweet Pickles. Contain one-tenth of one per cent of alum and sodium benzoate." Manufacturer, National Pickle and Canning Company, St. Louis Branch, U. S. A. Retailer, Mickey Mercantile Company, Morrill. Salts of aluminum present. Illegal.

No. 9377. Tested for salts of aluminum. None found. Passed.

- No. 9378. Tested for salts of aluminum. None found. Passed.
No. 9396. Tested for salts of aluminum. None found. Passed.
No. 9397. Tested for salts of aluminum. None found. Passed.

GELATINE DESSERTS.

Under this heading are four samples, Nos. 7743, 7744, 7745 and 7746, "Wixon's Gelatine Dessert. A compound artificially colored. Dainty and Delicious. Directions:—Add a pint of boiling water to contents of cup, pour in moulds and cool." The following flavors were claimed on the label: raspberry, cherry, lemon, strawberry. Manufacturer, Wixon Spice Company, Chicago. Retailer, E. J. Wilson, Hutchinson.

The directions were followed and jellies of good consistency obtained, similar to those usually made by plain gelatine.

These jellies, contrary to the indications on the label, had scarcely any flavor at all. Indeed it was almost impossible to tell the different jellies apart by their flavor as they all tasted almost exactly alike.

Products not containing the flavors claimed are misbranded.

The gelatine compound was contained in a small glass cup with tin cover and contained on the average less than three ounces of material, of which cane sugar comprised an average of 83.4 per cent. The cost of the sugar at six cents a pound is slightly under one cent. Therefore the gelatine that was left, about half an ounce, sold for nine cents, or at the rate of eighteen cents an ounce. The cost of the cup is not considered at this time.

OILS.

- No. 2842. Label, "Sweet Oil." Passed.
No. 2889. Label, "Yellow Malaga Olive Oil, Nonedible." Passed.
No. 8924. Label, "Olive Oil." Passed.
No. 8972. Label, "Yellow Malaga Oil Compound for Technical Use." Jobber, C. E. Potts Drug Co., Wichita. Contains much cottonseed oil.

MISCELLANEOUS.

No. 7892. Label, "Heinz Dill Pickles." Retailer, Fort Scott Meat Market, Fort Scott, Kan. Two cans were sent in under this number as "swells." Fermentation had started, and enough gas had been produced to cause the ends of the cans to bulge outward slightly. Both cans were opened at once. At the time of opening the contents were normal, sound and perfectly good. Some of the pickles were eaten and some kept in the refrigerator several days and afterward eaten, and were apparently perfectly sound. However, it is advised that all "swells" should be removed from the

shelves and no longer offered for sale, as it cannot be known how long it will be before they become unfit for eating.

No. 9371. Label, "Corn Sugar Vinegar." Acid, 4.1 per cent. Passed as regards acidity.

No. 7751. Label, "Sure and Pure." Manufacturer, Sure and Pure Manufacturing Company, Burlington, Iowa. Retailer, E. J. Wilson, Hutchinson. (See special article elsewhere.)

No. 9352. Under this number several unlabeled bottles were received, and an empty bottle bearing the label, "Weiss Beer." Artificially colored and flavored, nonintoxicating, one-tenth of one per cent of benzoate of soda. Bottled by Sand Springs Bottling Company, Abilene. Retailer, C. C. Brehm, Abilene. One of the unlabeled bottles contained 0.2 per cent absolute alcohol by volume, and contained 0.01 of 1 per cent anhydrous of sodium benzoate.

No. 6488. Label, "Maple Syrup." Passed.

No. 9392. Label, "Syrup." Corn syrup, 80 per cent; rock candy syrup, 20 per cent. Containing no saccharine and found as labeled. Passed.

No. 9393. Label, "Syrup." Corn syrup, 80 per cent; rock candy, 20 per cent. Containing no saccharine and found as labeled. Passed.

No. 9395. Label, "Jelly." Contained no saccharine, benzoic or salicylic acids or glucose. Passed.

No. 6479. Label, "Ward's Pur-Eta Brand Red Oak Coloring Aniline." Manufacturer, Tyrrell, Ward & Co., Chicago. Retailer, Frost and Frost, Anson, Kan. Is a two-per-cent solution of fast red C in water. It is not a permitted or certified color and would cost about twenty-five cents a gallon to make. Sells for twenty-five cents for two ounces.

DRUG ANALYSES No. XXXVII.

L. E. SAYRE, Director; L. D. HAVENHILL, Chief; G. N. WATSON, Analyst; C. M. STERLING, Microscopist.

The drugs and preparations mentioned below have been received by the drugs laboratory. Analyses of these have been made and are herewith reported. It should be stated in connection with this report that in some cases no decision is reported as to whether the substance is passed or not passed; as, for example, in laboratory No. 4861, "Tincture of Lobelia." In all such cases it is to be understood that the article in question is passed provisionally, pending further investigations now in progress on preparations which have no specific standard other than the formula which is laid down in the United States Pharmacopœia.

Druggists should be again cautioned that official preparations such as tinctures, wines, etc., should be made strictly according to the Pharmacopœia. If the Pharmacopœia requires the tincture, for example, to be made from the drug itself and not by diluting the fluid extract or any concentrated preparation, the directions should be followed; in which case the preparation is sure to analyze within the limits of any reasonable standard. Some samples have come into this laboratory that were evidently made by the dilution of fluid extracts, contrary to the directions of the Pharmacopœia, and in such cases the analysis showed certain deficiencies which preparations of that kind are likely to betray.

DON'T MAINTAIN A MORGUE FOR UNSALABLE STOCK.

In the September issue of the *National Druggist* there appears a timely editorial regarding the "slow sellers"—the unsalable goods. The editor remarks that more than one writer has commented recently upon the tendency of unsalable goods to ascend gradually until they reach the top shelf, where they settle down and gather dust forever. Slow-selling goods are placed on a shelf or two higher to make room for quicker sellers. The editor draws up a strong indictment against the top-shelf or unsalable remedies; he advises clearing the top shelf; clean it up; abolish it if you can; but at any rate clear it at regular intervals. It is a mistake to give shelf room to goods that are unsalable. Stuff that you cannot give away, possibly is n't worth shelf room. Don't maintain a morgue for unsalable stock.

We agree with the author that this proposition is worth looking into, as we have more than once indicated in our reports. It is from this class of materials that the drug inspectors are likely to find substandard material, causing the druggist and the department no end of trouble. A very fair percentage of material that has been sent in to the department for examination during the past three years and found to be substandard and worthless has come from this class of so-called top-shelf goods.

ESSENCE OF PEPSIN.

Lab. No.	Insp. No.	Name.	City.	Acidity.	Color.	Amount of undigest'd* albumen.
4952	8953	Higginson Drug Co...	Wichita.....	Below.....	Normal.....	16 cc.
4956	8957	Dr. Jordan drug store,	.....	.....	Darker than normal.....	9 cc.
4957	8958	Wm. N. Swentzell....	"	"	Lighter than normal.....	23 cc.
5008	8995	Gem drug store.....	Ellinwood.....	"	do.	25 cc.
5037 ^a	2980	H. P. Applebaugh....	Kan. City, Kan.	"	Light.....	15 cc.
5037 ^b	2985	Caldwell's Pharmacy..	"	"	Normal.....	3 cc.
5116	2984	O. W. Klee	"	"	Normal.....	28 cc.

* Not more than 1 cc. of undigested albumen should remain.

Lab. No. 4751, Insp. No. 2861. "Hiawatha Blackberry Cordial." Manufactured by Garrett & Co., Norfolk, Va. Total solids in 100 cc., 29.33 gms.; per cent sugar, 5.7; 15 per cent alcohol.

Lab. No. 4805, Insp. No. 8825. "Yellow Bees Wax." A. M. Lewellen, Gaylord. Sp. gv., .9595; saponification value, 64.2; melting point, 48° to 50°. Contains paraffin. Adulterated.

Lab. No. 4815, Insp. No. 8835. "Yellow Bees Wax." J. V. Wise, Grinnell. Sp. gv., .9848; saponification value, 98.6; melting point, 63.8°.

Lab. No. 4826, Insp. No. 8846. "Yellow Bees Wax." C. A. Little, Bunker Hill. Sp. gv., .8847; saponification value, 18.2; melting point, 58° C.; melting point not sharp. Contains paraffin. Adulterated.

Lab. No. 4834, Insp. No. 8864. "White Wax." D. Hogaboom, Pittsburg. Sp. gv., .8918; saponification value, 7.5; melting point, not sharp, 53° to 79°. Contains paraffin. Adulterated.

Lab. No. 4839, Insp. No. 8869. "White Wax." T. L. Bennett, Weir City. Sp. gv., .9347; saponification value, 66.9; melting point, 53° C. Contains paraffin. Adulterated.

Lab. No. 4850, Insp. No. 8885. "Yellow Bees Wax." Patton, Frontenac. Jobber, Evans, Smith & Co. Sp. gv., .9292; saponification value, 66.6; melting point, 51.5° to 52° C. Contains paraffin. Adulterated.

Lab. No. 4861, Insp. No. 8896. "Tr. of Lobelia." Mecca drug store, Coffeyville. Total residue in 100 cc., 1.59 gms.; 42.6 per cent alcohol.

Lab. No. 4874, Insp. No. 8909. "Yellow Bees Wax." Charles Woolven, Oswego. Sp. gv., .9506; saponification value, 92.6; melting point, 63° C. Passed.

Lab. No. 4902, Insp. No. 8928. "Ammonia Water." Lewis & McCandless. Contains 9.7 per cent of ammonia. Passed.

Lab. No. 4908, Insp. No. 8852. "Cream of Tartar." W. E. Fees & Bro., Parsons. Contains 98.6 per cent potassium bitartrate and conforms to other U. S. P. requirements. Passed.

Lab. No. 4910, Insp. No. 8954. "Zinc Sulphate." Cook & Co., Parsons. Conforms to U. S. P. requirements. Passed.

Lab. No. 4911, Insp. No. 8555. "Yellow Bees Wax." Cook & Co., Parsons. Sp. gv., .9617; saponification value, 94.8; melting point, 63°. Passed.

Lab. No. 4917, Insp. No. 8856. "Cream of Tartar." Sly Drug Company, Parsons. Contains 99 per cent of potassium bitartrate. Passed.

Lab. No. 4938, Insp. No. 8940. "Tr. of Lobelia." Total solids in 100 cc. 21.69; 46.7 per cent alcohol. Retailer, W. H. Broadwell, La Cygne.

Lab. No. 4947, Insp. No. 8949. "Tr. of Iodin." Fred A. Bichet, Burns. Contains 4.13 grammes of potassium iodide and 6.29 grammes of iodine in 100 cc. of the tincture. Below standard.

Lab. No. 4950, Insp. No. 8952. "Tr. of Lobelia." Wilson and Crosser, Altoona. Contains 18.24 grammes of total solids in 100 cc., and 44.7 per cent alcohol.

Lab. No. 4955, Insp. No. 8956. "Tr. of Lobelia." Bartell Drug Company, Wichita. Contains 2.16 grammes of extractive in 100 cc., and 47.1 per cent alcohol.

Lab. No. 4961, Insp. No. 8962. "Spts. of Camphor." Contains 11.4 per cent of camphor. Above standard.

Lab. No. 5006, Insp. No. 9001. "Royal Liquid Egg Shampoo." Manufactured by Ed. Gerrard, Chicago, Ill. Artificially colored solution of soap. Contains no egg. Misbranded.

Lab. No. 5016, Insp. No. 2884. "Ponayo Headache Tablets." Ponayo Drug Company, Inc., Kansas City, Mo. Tablets were found to contain starch, caffeine and acetphenetidin.

Lab. No. 5017, Insp. No. 2885. "Quinine Water Hair Tonic." Henry Thayer and Company, Manufacturing Pharmacists. Declared to contain 0.33 per cent alcohol. Found to contain 30.5 per cent alcohol. No quinine was detected. Misbranded.

Lab. No. 5024, Insp. No. —. "Priest's Dyspepsia Tablets." Clay Center. Each tablet weighs 1.334 grammes. Ash, 15.21 per cent. Ash is composed of magnesium oxide with slight amount of alumina. Tablets contained charcoal, magnesia, sugar and corn starch. They have no digestive value.

Lab. No. 5032, Insp. No. 2898. "Face Cream." Purchased from vender. Found to contain tragacanth, glycerin, oil of citronelle and hydrogen peroxide.

Lab. No. 5033, Insp. No. 7898. "Red Cross Seltzer, made from Natural Medical Water: Sodium Bromide." Bottled by J. A. Westermeir, Colby. Total solids in 100 cc., 0.2848 grammes. Over 50 per cent of the total solids was sodium chloride. Alkaline earth salts are present. The preparation was carbonated. No bromide present.

Lab. No. 5044, Insp. No. 2910. "Pepsin and Charcoal Lozenges." Retailer, W. H. Heaton, Kansas City, Kan. Distributed by the Lawrence Townley Company, N. Y. Tablets had no digestive effect on egg albumin.

Lab. No. 5045, Insp. No. 2911. "Acetic Acid." W. H. Heaton, Kansas City, Kan. Exceeds limit of empyreumatic substances. Below standard. Contains 28.6 per cent acid.

Lab. No. 5055, Insp. No. 2923. "Dilute Hydrocyanic Acid." B. F. Mouser, Kansas City. Contains but a trace of hydrocyanic acid. Adulterated.

Lab. No. 5065, Insp. No. 2933. "Acetic Acid." Ivan M. Caldwell, Kansas City. Contains 29.4 acid. Exceeds limit of empyreumatic substances. Below standard.

Lab. No. 5068, Insp. No. 2936. "Acetic Acid." Junction Pharmacy, Kansas City. Contains 28.2 acetic acid. Had a yellowish color and exceeds limit of empyreumatic substances. Gave slight test for sulphate. Below standard.

Lab. No. 5071, Insp. No. 2939. "Spt. of Nitrous Ether." Green & Elliott, Kansas City, Kan. Sample was dispensed in transparent bottle and was found to contain 2.23 per cent of ethyl nitrite. Below standard.

Lab. No. 5072, Insp. No. 2940. "Acetanilid Compound No. 4." Tablets weigh .4266 grammes. Were found to contain starch, acetanilid, caffeine and sodium bicarbonate.

Lab. No. 5088, Insp. No. 2956. "Wine of Pepsin." C. F. Molloy, Kansas City, Kan. Assay showed 10 cc. of undigested albumen. Below standard.

Lab. No. 5093, Insp. No. 2961. "Royale Bay Rum." Ed. Gerrard Perfume Company, Chicago. Sold by Knox ten cent store. Alcohol declared, 33½ per cent. Sample was artificially colored and contained 30½ per cent alcohol.

Lab. No. 5105, Insp. No. 2972. "Fluid Pepsin." Sees' Pharmacy, Kansas City, Kan. Assay showed 2 cc. of undigested albumin. Passed.

Lab. No. 5110, Insp. No. 2978. "N. E. D. A. Hair Renewer." Found to contain sulphur, lead acetate, sodium chloride and glycerin.

Lab. No. 5113, Insp. No. 2981. "N. E. D. A. Headache Relief." Powders were found to contain acetanilid, caffeine and sodium bicarbonate. Declared to clear the brain and strengthen the nerves, and to contain no morphine, chloral or bromide. The powder has no advantage over the official compound acetanilid powder.

Lab. No. 5117, Insp. No. 2985. "Copenhagen Snuff." Sample was found to contain ammonium carbonate, sugar, sodium chloride and tobacco.

Lab. No. 5121, Insp. No. A. "Linseed Oil." Sp. Gv. .8865; iodine No. 95.51; saponification No. 96.5. The oil contained over 40 per cent of unsaponifiable matter, and when spread upon a glass plate did not dry, showing presence of nondrying oil. A pure linseed oil should have sp. gv., .925 to .935; saponification, 187 to 195; iodine value not less than 170. When spread upon a glass and allowed to stand in a warm place it should be converted into a hard transparent resin. Linseed oil should be completely saponifiable. Sample was not a linseed oil, but a compound.

BULLETIN

OF THE

Kansas State Board of Health.

Published Monthly at the Office of the Secretary of the Board, Topeka, Kan.
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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DEACON, Registrar.

No. 10.

OCTOBER, 1911.

VOL. VII

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Do you read the labels?

The cost of food bears no relation to its nutritive value.

As the weather grows colder, you should take more exercise.

It is not what you eat, but what you digest, that nourishes you.

If you do not enjoy work nor have a zest in accomplishment,
you had better consult your doctor. You are not normal.

The birth rate for the first two weeks' returns under the vital
statistics law was 25.8 per cent; the death rate 10.6 per cent per
1000.

No drug or grocery store has the right to conduct a "morgue"
in conjunction with their business, where "dead" or deteriorated
stock may be kept for sale.

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..
Meade.....	0	0	4	0	0	0	0	0	0	0	0	0
Miami.....	0	0	2	1	1	1	0	0	0	0	0	0
Mitchell.....	0	0	0	0	0	0	0	0	0	0	0	0
Montgomery.....	2	1	6	0	3	0	3	0	2	0	0	0
* Morris.....												
* Morton.....												
Nemaha.....	0	0	3	0	0	0	0	0	0	0	0	0
Neosho.....	1	0	0	1	0	0	0	0	0	0	0	0
Ness.....	0	0	5	0	0	0	0	0	0	0	0	0
Ness.....	0	0	4	0	0	0	0	0	0	0	0	0
Norton.....	0	0	0	0	0	0	0	0	0	0	0	0
Osage.....	0	0	2	0	0	0	1	0	0	0	0	0
Osage.....	0	0	7	0	0	0	1	0	0	0	0	0
Osborne.....	0	0	5	0	0	0	0	0	0	0	0	0
Ottawa.....	1	0	5	0	0	0	0	0	0	0	0	0
Parsons.....	1	0	5	0	0	0	0	0	0	0	0	0
* Phillips.....												
* Pottawatomie.....												
Pratt.....	1	1	5	0	0	0	2	0	0	0	0	0
Rawlins.....	0	0	0	0	0	0	0	0	0	0	0	0
Reno.....	1	0	2	0	0	0	1	0	0	0	0	0
Republic.....	0	0	3	0	0	0	1	0	0	0	0	0
Rice.....	1	0	20	4	0	0	0	0	0	0	0	0
Riley.....	1	1	3	0	0	0	0	0	0	0	0	0
Rooks.....	0	0	0	0	1	0	0	0	0	0	1	0
Rush.....	1	0	0	0	0	0	0	0	0	0	0	0
Rush.....	0	0	2	0	0	0	0	0	0	0	0	0
Russell.....	0	0	0	0	0	0	2	0	0	0	0	0
Saline.....	0	0	0	0	0	0	0	0	0	0	0	0
Scott.....	0	0	0	0	0	0	0	0	0	0	0	0
Scott.....	0	0	0	0	1	0	0	0	0	0	0	0
Seawick.....	1	0	0	0	0	0	1	0	0	0	0	0
Shawnee.....	0	0	0	0	0	0	0	0	0	0	0	0
Sheridan.....	1	1	3	0	0	0	0	0	0	0	0	0
Sherman.....	0	0	3	0	2	0	0	0	0	0	0	0
Sherman.....	0	0	0	0	0	0	0	0	0	0	1	0
Smith.....	0	0	2	0	0	2	0	0	0	0	0	0
Stafford.....	0	0	0	0	0	0	0	0	0	0	0	0
* Stanton.....												
Stevens.....	0	0	0	0	0	0	0	0	0	0	0	0
* Sumner.....												
Thomas.....	0	0	2	0	0	0	0	0	0	0	0	0
Trego.....	0	0	0	0	1	0	0	0	0	0	0	0
Wabawmsee.....	0	0	0	0	0	0	0	0	0	0	0	0
* Wallace.....												
Washington.....	0	0	0	0	0	0	0	0	0	0	0	0
Wichita.....	0	0	0	0	0	0	0	0	0	0	0	0
Wilson.....	0	0	5	0	4	1	0	0	0	0	0	0
Woodson.....	0	0	3	0	0	0	0	0	0	0	0	0
* Wyandotte.....												
Cities:												
Atchison.....	1	0	0	0	0	0	0	0	0	0	0	0
Coffeyville.....	1	1	4	0	1	0	0	0	0	0	0	0
Hutchinson.....	0	0	23	0	0	0	0	0	0	0	0	0
Fort Scott.....	0	0	1	0	1	0	0	0	0	0	7	0
Kansas City.....	18	0	15	0	9	0	3	0	3	0	0	0
Leavenworth.....	0	0	10	0	1	0	0	0	0	0	0	0
Parsons.....	1	0	0	0	1	0	1	0	0	0	0	0
Parsons.....	0	0	1	1	0	0	0	0	0	0	0	0
Pittsburg.....	2	0	5	0	5	0	1	0	11	0	0	0
Topeka.....												
* Wichita.....												
State Institutions.....	157	0	1	0	0	0	0	0	0	0	0	0

* No report.

The supreme court of another state has decided that a city has no prescriptive right to pollute the natural waters of the state, and that there is no such thing as a prescriptive right to maintain a public nuisance.

DEATHS AND BIRTHS IN KANSAS,

August 10 to August 31 (incl.), 1911.

DEATHS.

Stillbirths not included.

Typhoid fever.....	47
Smallpox.....	6
Measles.....	1
Scarlet fever.....	1
Whooping cough.....	9
Diphtheria.....	6
Dysentery.....	9
Tuberculosis, all forms.....	57
Cancer, all forms.....	44
Rheumatism, all forms.....	4
Diabetes.....	18
Other general diseases.....	27
Meningitis.....	24
Cerebral hemorrhage.....	40
Paralysis.....	27
Other diseases nervous system.....	27
Organic heart disease.....	56
Other diseases circulatory system.....	27
Bronchopneumonia.....	5
Pneumonia.....	15
Other diseases respiratory system.....	15
Diarrhea and enteritis (under 2 years)....	74
Diarrhea and enteritis (2 years and over),	20
Appendicitis.....	10

Diseases of liver and adnexa.....	11
Peritonitis.....	14
Other diseases digestive system.....	18
Acutenephritis.....	16
Bright's disease.....	47
Other diseases genito urinary system.....	7
The puerperal state.....	11
Diseases of the skin, etc.....	1
Diseases of the bones, etc.....	1
Malformations.....	2
Diseases of early infancy.....	92
Old age.....	29
Suicides.....	10
Accidents.....	53
Homicides.....	11
Ill defined diseases.....	4
Total deaths.....	896

BIRTHS.

Males.....	690
Females.....	666
White.....	1,324
Colored.....	32
Total births, 1,356.	
Stillbirths, 61.	

AGES AT DATE OF DEATH.

<i>Ages.</i>	<i>No.</i>
-1.....	176
1-2.....	52
3-5.....	25
6-10.....	15
11-15.....	24
16-20.....	29
21-25.....	40
26-30.....	36
31-35.....	31
36-40.....	28
41-45.....	38
46-50.....	21
51-60.....	67
61-70.....	115
71-80.....	131
81-90.....	66
91-100.....	3
100-+.....	0
Unknown.....	1
Total.....	896

SEX.	
Males.....	506
Females.....	390
COLOR.	
White.....	826
Indian.....	1
Black.....	69
NATIONALITY.	
Native.....	746
Foreign.....	129
Unknown.....	21
SOCIAL CONDITION.	
Single.....	389
Married.....	345
Widowed.....	147
Divorced.....	11
Unknown.....	4

The now modern hospital of the University school of medicine is now open to receive patients.

To Health Officers and Physicians!

The department of health has arranged through Prof. F. H. Billings of the State University, to make bacteriological examinations of waters that may be suspected to be polluted. He will be glad to furnish sterile mailing containers to all who desire to send in samples of water; accompanying these containers are printed directions for collecting the sample.

In order that the results of the examination may be a fair interpretation of the conditions that actually exist, it is recommended that only these sterile containers be used to send samples for examination. Send all orders for containers and all samples for examination direct to Prof. F. H. Billings, Kansas University, Lawrence, Kan.

Error in Food Analysis No. 34.

In the July BULLETIN, on page 135, report was published of the analysis, No. 7793, of Gold Band Brand flour, manufactured by the Central Kansas Milling Company, Lyons, Kan., which analysis showed a reaction for nitrites, which seemed to indicate that the flour was bleached, the same not being labeled as being bleached, and therefore illegal.

Investigation has shown that the Central Kansas Milling Company do not bleach their flour, that they have no bleaching apparatus in their mill, and that, therefore, the flour was not bleached, notwithstanding the reaction for nitrites which the flour gave upon analysis.

The sample in question was secured from a local dealer in Hutchinson, Kan., after having been stored some time in the usual place for storing flour in the local dealer's establishment, and the flour in question evidently became contaminated with nitrites after it left the mill, which is entirely possible, as has been proven experimentally.

The BULLETIN takes pleasure in giving the above explanation and exonerating the Central Kansas Milling Company from any illegal action.

The attention of physicians is especially called to the report of Professor Sayre which deals with the length of time required to disintegrate the various pills and tablets found upon the market.

DRUG ANALYSIS No. XXXVIII.

L. E. SAYRE, Director; L. D. HAVENHILL, Chief; G. N. WATSON, Analyst; C. M. STERLING, Microscopist.

The present report embraces a number of drugs which give interesting and instructive data. That portion of the report which relates to pills shows the time of disintegration of the pills in water and pepsin solutions. We are not, in this report, recognizing the solubility of the coating. Some of these were gelatin coated, others sugar coated, still others chocolate coated. We found some difference in the solubility of the various coatings, but in this investigation the coating was considered immaterial. The disintegration of the mass composing the medicinal ingredients is especially considered in this report.

It will be seen by glancing over the table that the time required for disintegration of the different pills varied considerably. We may venture the assertion that many retail druggists have not seriously considered the question of the age of ready-made pills in dispensing them and are not aware of the fact that there are certain ingredients and mixtures of ingredients that, when massed and made into pillular form, change very materially with age in respect to solubility or in the property of disintegration. We are not surprised at this, because this is a comparatively new and untried field. It is safe to advise manufacturers, retailers and jobbers to pay more strict attention to this phase of remedial agents, and, as a general proposition, we feel that we are safe in advising the retail trade in general to be careful in buying goods of this kind that are likely to be kept on the shelves for so long a period of time as some of the samples have been which are recorded in this report.

A pill containing resins and extractives, for example, which becomes insoluble by age, certainly should not be dispensed after ten years, and beyond, without question. It is true that such enteric pills as pills of aloes and mastic—those whose disintegration is intentionally retarded—are not considered as meritorious if their disintegration is rapid. Even such pills, however, should not be dispensed without question after a period of ten or more years. In the last report, of September, 1911, page 173, we cautioned against the practice of giving shelf room to goods that are slow selling, and we would emphasize the importance of purchasing in small quantities such goods, to avoid the practice of maintaining "a morgue"—quoting the phrase of the *National Druggist*—for such goods.

TIME REQUIRED FOR DISINTEGRATION OF PILLS.*

Lab. No.	Insp. No.	Kind.	Time for disintegration.		Date of manufacture.	Retailer.	Manufacturer.
			g	h			
5086	2901	Emmenagogue.	50	15	Unknown.	A. T. Long, K. C.	Birroughs Bowe Co., Baltimore, Md.
5088	2902	Morph. sulph., 1 gr.	39	14	Unknown.	A. T. Long, K. C.	Pittsburgh's Mt. Co., Baltimore, Md.
5088	2904	Fe. ac. an. sty., tablets	19	9	Unknown.	F. M. K. K. K. C.	Fraser Tab. Co., N. Y.
5088	2906	Acetan. and qu. comp. tablets	12	9	Unknown.	D. G. Jones, K. C.	Fraser Tab. Co., N. Y.
5093	2910	Antimalarial tablets	75	69	Unknown.	D. G. Jones, K. C.	Fraser Tab. Co., N. Y.
5095	2915	Tablet of creosote compound	30	28	1897.	D. G. Jones, K. C.	Fraser Tab. Co., N. Y.
5090	2916	Hipon. tab., 1 gr.	22	68	N. Y. stock.	D. G. Jones, K. C.	Parke, Davis & Co.
5081	2919	Morph. sulph., 1 gr.	77	14	U. S. stock.	E. R. Russell, K. C.	Wm. S. Merrill Chem. Co., Ann. Ohio.
5088	2921	Carbolic pills.	11	79	Said to be new stock.	E. R. Russell, K. C.	
5084	2122	Styptic pills.	84	21		E. R. Russell, K. C.	
5086	2922	Carbolic pills.	76	72	Before 1890.	E. F. Mouser, K. C.	
5087	2925	Camphor and opium.	190	150	1899.	E. F. Mouser, K. C.	
5085	2926	Camphor and nux vomics.	180	170	Before 1890.	E. F. Mouser, K. C.	
5089	2927	Ichthyol.	61	62	Before 1890.	E. F. Mouser, K. C.	
5089	2928	Aloes and iron.	67	70	1891.	B. F. Mouser, K. C.	
5081	2929	Warburg's tr.	86	86	1899.	Junetion Pharm., K. C.	
5089	2937	Antidyspeptic pills.	67	67	Before 1890.	Flag Pharmacy, K. C.	
5081	2939	Warburg's tr.	86	80	Before 1890.	Geo. Foerschler, jr., K. C.	
5073	2941	Styr. nitrate, 1/2 gr.	27	27	1899.	Geo. Foerschler, jr., K. C.	
5074	2942	Styr. nitrate, 1/2 gr.	18	18	1899.	Geo. Foerschler, jr., K. C.	
5081	2946	Morphine and atropine.	160	150	Before 1890.	Geo. Foerschler, jr., K. C.	
5082	2960	Aphrodisiac.	77	66	Before 1890.	W. J. Eppert, K. C.	
5083	2961	Styr. nitrate, 1/2 gr.	25	25	1899.	W. J. Eppert, K. C.	
5084	2962	Arsenious acid, 1/8 gr.	23	22	Before 1890.	W. J. Eppert, K. C.	
5088	2968	Nitrobenzoin.	26	22	Before 1890.	W. J. Eppert, K. C.	
5100	2968	Hopanic.	71	65	Before 1890.	R. S. Pineser, K. C.	
5101	2969	Calomel, 1 gr.	25	25	Before 1890.	R. S. Pineser, K. C.	
5102	2970	Peppin. bi. and stry.	20	20	Before 1890.	R. S. Pineser, K. C.	
5108	2971	Styr. comp.	79	77	Before 1890.	R. S. Pineser, K. C.	
5106	2974	Morph. sulph., 1 gr.	54	52	1902.	R. S. Pineser, K. C.	
5107	2975	Opium, 1 gr.	25	25	Before 1890.	Cartnell's Pharm., K. C.	
5107	2975	Opium, 1 gr.	51	45	Before 1890.	Cartnell's Pharm., K. C.	
5089	2247	Ergotin, 2 grs.	59	64	Unknown.	C. O. Myers, Atchison	

* Time of disintegration was determined in two liquids: one a solution of 2 per cent of pepsin and 0.25 per cent of hydrochloric acid in distilled water; the other distilled water alone about 25 cc. of the liquid being used, for each pill. The pills were supported on white gauze in the tops of specimen tubes which were kept in a bath at 37° to 39° C. during the experiment.

TINCTURE OF GELSEMIUM.

It should be observed that there is no standard fixed for tincture of gelsemium at the present time, and the present report relating to this preparation conveys only the relative constituency of the preparation as found in the Kansas market. A preparation which is made from the official drug and by the use of the official menstruum yields 1.36 grammes of extractive in 100 cc. of the preparation, but it must be confessed that gelsemium root varies considerably in its extractive constituent, and therefore this percentage, as above indicated, should be considered as an average percentage.

LINSEED OIL.

A number of linseed oils have come to the laboratory for opinion as to their purity. The present report includes some of these articles upon which we have reported to the various firms who have sent them to the University.

SPIRITS OF CAMPHOR.

Indications are that this preparation is improving.

One of the patent medicines, No. 5145, "Haynox," is a rather interesting preparation, because of the extravagant claims made for it by its manufacturers. We understand, of course, that under the ruling of the United States supreme court the statement of the therapeutic qualities of a preparation is not controlled by the federal food and drugs act, but manufacturers of such preparations, when they distribute these over the state of Kansas, should read carefully the rules and regulations of the Board of Health of the state of Kansas, as any statement as to the properties of the so-called remedial agent would be considered as an act of misbranding.

TINCTURE OF GELSEMIUM.*

Lab. No.	Insp. No.	NAME.	City.	Per cent alcohol.	Gms. extractive in 100 cc.
4677	2817	United Drug Company.....	Pleasanton.....	89.47	1.97
4682	2822	Lhuillier.....	Pleasanton.....	88.96	1.55
4818	8838	W. W. Gibson.....	Wa Keeney.....	61.87	1.2
4852	8287	Roy E. Burtholt.....	Cherokee.....	60.5	2.7
4899	8925	Gem Drug Store.....	Chanute.....	60.37	1.72
4917	8961	U S. Pharmacy.....	Parsons.....	91.35	1.15
4942V	8944	A. K. Snyder.....	Winfield.....	62.1	1.72
4943	8945	E. M. Bailey.....	Eureka.....	61.95	1.86
4967	8968	Oscar R. Bissantz.....	Wichita.....	91.4	.84

* Tincture of gelsemium should contain about 61.1 per cent of alcohol and 1.86 grammes of extractive in 100 cc. of the preparation.

LINSEED OIL.*

Lab. No.	Insp. No.	NAME.	City.	Sp. Gv.	Sapon. No.	Iodin No.	Drying test.
5119A				.9308	194.5	182.2	Normal.
5183	9005	Adolph Lange.....	Leavenworth.....	.926	190.8	167.02	Normal.
5185	9007	A. M. Hughes Paint & Glass Co., Smith & Lindsay, retailer.....	Kan City, Mo. Parsons.....		192.8	198.7	Normal.
5187	9009	Leubbe & Trompeter.....	Horton.....				
5189	9011	C. A. Lauder.....	Horton.....	.928	191.9	174.58	Normal.
5140		A. L. Scott.....	Bern.....	.881	97.53		
5144 †	9 X	C. Conyers.....	Fort Scott.....		112.12	92.8	Not normal.†
5168	12 X	Otto Wolgast.....	Alta Vista.....	.924	188.6	148.6	Not normal.†
5225 §		Southwestern Lumber Co.....	Haven.....	.8896	99.7	102.9	Not normal.†

* A pure linseed oil should have a specific gravity of 0.925 to 0.935; saponification number of 190-195; iodine number not less than 170; should dry perfectly on glass plate.

† Contained mineral oil.

‡ Flash point, 100°.

§ Flash point, 100° C.; fire test, 160°.

|| Broken in transit.

SPIRIT OF CAMPHOR.*

Lab. No.	Insp. No.	NAME.	City.	Gms. of camphor in 100 cc.
5147	9018	Fred T. Walker.....	Topeka.....	8.86
5148	9019	Hargis Pharmacy.....	Topeka.....	8.80
5152	9023	C. M. Knowlton.....	Topeka.....	6.96
5156	9025	H. C. Martin.....	Topeka.....	8.5
5157	9029	A. W. Lacey.....	Topeka.....	9.88
5174	9038	E. E. Ceusad.....	Newton.....	10.58
5192	9056	Uhl Drug Company.....	St. John.....	9.8
5186	9059	W-bb's Pharmacy.....	Stafford.....	10.7
		Arlington Drug Company.....	Arlington.....	7.34

* Spirit of camphor should contain 10 gms. of camphor in 100 cc. of the spirit.

SPIRIT OF PEPPERMINT.*

Lab. No.	Insp. No.	NAME.	City.	Cc. of oil in 100 cc.	Color.
5154	9025	J. W. Brown.....	Topeka.....	2.63	Normal.
5177	9041	John Reese.....	Newton.....	9.84	Darker than normal.
5194	9058	C. L. Hygh.....	Stafford.....	8.61	Darker than normal.

* Spirit of peppermint should contain 10 cc. of oil in 100 cc. of the spirit.

TR. OF IODINE.

Lab. No.	Insp. No.	NAME.	City.	Gms. of iodine in 100 cc.	Gms. of potass. iodide in 100 cc.
5183	9047	C. H. Hubbell.....	McPherson.....	7.29	4.16
5184	9048	Geo. S. Bueford.....	Nickerson.....	9.89	7.98
5146	9017	Fred T. Walker.....	Topeka.....	7.01	5.18

* Tr. of iodine should contain at least 6.86 gms. of iodine and 5 gms. of potass. iodide in 100 cc. of the tincture.

Lab. No. 2856, Insp. No. 1834. "Alpen Seal." Southwestern Drug Company, Wichita. Manufactured by the Alpen Chemical Company, Chicago. Found to contain glycerin, oil of cinnamon, saccharin, sugar, small amount of sodium salts and some vegetable material.

Lab. No. 4365, Insp. No. —. "Foley's Honey and Tar Compound." Declared to contain 6 per cent of alcohol. Found to contain 11 per cent of alcohol, 29.1 per cent cane sugar, $33\frac{1}{2}$ per cent of reducing sugar and volatile oils.

Lab. No. 4558, Insp. No. 2758. "Fig Laxative." Contained 10 per cent alcohol, 50.4 per cent cane sugar and aromatics. No reducing sugar present.

Lab. No. 4760, Insp. No. 8802. "Tr. of Veratrum Viride." Weeks Drug Company, Mankato. Contains 39.3 per cent alcohol and 17.76 gms. of extractive in 100 cc. of the tincture.

Lab. No. 4806, Insp. No. 8826. "Tr. of Cannabis Indica." Drs. Munk and Hall, Randolph. Contained 87.5 per cent alcohol and 1.2 gms. of extractive in 100 cc. of the tincture.

Lab. No. 4872, Insp. No. 8907. "Tr. of Cantharides." Owl Drug Company, Cherryvale. Contained 84.6 per cent alcohol.

Lab. No 4907, Insp. No. 8933. "Tr. of Veratrum Viride." Welch Bros., Garnett. Contained 85.67 per cent of alcohol and 3.83 gms. of extractive in 100 cc.

Lab. No. 4932, Insp. No. 8934. "Tr. of Veratrum Viride." Kiddo-Ball Drug Company, Fort Scott. Contains 66.1 per cent alcohol and 4.97 gms. of extractive in 100 cc. of the tincture.

Lab. No 4940, Insp. No. 8942. "Tr. of Veratrum." J. N. Harter, Winfield. Contained 55 per cent of alcohol and 2.15 gms. of extractive in 100 cc. of the tincture.

Lab. No. 4966, Insp. No. 8967. "Tr. of Veratrum Viride." Makin Eye Drug Company, Parsons. Contains 90.1 per cent alcohol and 1.29 gms. of extractive in 100 cc.

Lab. No. 4981 $\frac{1}{2}$, Insp. No. 8973. "Petroleum Jelly." Kress Store, Wichita. Prepared by Allen D. Wisley, Chicago. Tested by U. S. P. test for petrolatum. Had faint petroleum odor and taste; has slight fluorescence in unmelted state, which becomes distinct when melted. Specific gravity, 0.852; melting point, 45.5° C.

Lab. No. 5007, Insp. No 7871. "Bonano." Manufactured by the International Bonano Food Company, Chicago. Factory, Benton Harbor, Mich. Sold for a coffee substitute. Analysis of the sample showed moisture, 13.6 per cent; ash, 2.7 per cent; crude fiber, 3.33 per cent; ether soluble, 0.39 per cent; reducing sugar,

18.3 per cent; starch, 21.6 per cent; nitrogenous bodies, 3.25 per cent; hot water soluble, 47.95 per cent; cold water soluble, 46.88 per cent. Sample evidently consists of roasted bananas.

Lab. No. 5010, Insp. No. 2878. "Heltha-Tone." Manufactured by the Kansas City Brewers Company. Recommended for nervousness and loss of sleep. Declared to contain 0.6 per cent alcohol. Found to contain 1.25 per cent alcohol and 4.45 gms. extractive in 100 cc.

Lab. No. 5023, Insp. No. 2891. "Rexall Orderlies." Active ingredient, phenolphthalein.

Lab. No. 5041, Insp. No. 2907. "Tr. of Nux Vomica." Contained 0.1225 per cent strychnine. Passed.

Lab. No. 5043, Insp. No. 2909. "Curine for Dandruff." Said to eradicate dandruff, make hair grow and sooth the irritated scalp. Consists of vaseline colored red. Coloring matter is apparently alkannin. Preparation is manufactured by W. B. White, Kansas City, Kan., and retailed by W. H. Heaton, Kansas City.

Lab. No. 5046, Insp. No. 2912. "Turpentine." Sample was too small for complete analysis. Specific gravity, 0.861; refractive index, 1.482 at 20° C. Five cc. treated with sulphuric acid left 0.55 cc. residue. Should leave but 0.35 cc. The greater part distills between 155° and 162°. The evaporation of 1 cc. of the oil left a residue 0.0047 gms. Passed.

Lab. No. 5079, Insp. No. 2947. "Wine of Ipecac." Geo. Foerschler, jr., Kansas City. Contained 29.5 per cent alcohol and 3.07 gms. of extractive in 100 cc.

Lab. No. 5056, Insp. No. 2954. "Quinegg Shampoo Jelly." Vosburg Company. Sample consists of a green-purple, opaque, jelly-like soap. It is a potassium soap evidently made from cocoanut or palmtree oil or a mixture of the two. Contains glycerin and sugar. Contains no quinine or egg. Misbranded.

Lab. No. 5091, Insp. No. 2959. "Witch Hazel." Declared to contain 15 per cent alcohol. Preparation had specific gravity, 0.9917 and contained 14.2 per cent alcohol. Contained no methyl alcohol.

Lab. No. 5092, Insp. No. 2960. "Petroleum Jelly." Knox Five and Ten Cent Store, Kansas City. Tested by U. S. P. test. Has a petroleum odor and slight petroleum taste. Has a decided fluorescence in unmelted state which becomes quite marked after melting. Specific gravity at 60°, 0.862; melting point, 45.5° C. Sample was labeled "Refined U. S. P. Petroleum Jelly." U. S. P. petrolatum should have no petroleum odor, no taste nor fluorescence in

unmelted state, and only slight when melted. Specific gravity, should be 0.830 to 0.850, and melting point 45° to 48° C. Adulterated.

Lab. No. 5108, Insp. No. 2976. "Wine of Ergot." Cartwell Pharmacy, Kansas City. Contains 28 per cent alcohol and 8.27 gms. of extractive in 100 cc. of the preparation.

Lab. No. 5123, Insp. No. —. "Strawberry Pop." Examined for saccharin. None found.

Lab. No. 5122, "White Ribbon Temperance Beverage." Examined for alcohol. No alcohol found.

Lab. No. 5124. Preparation sold for "Oil of Eucalyptus." Sample contained 50.95 per cent alcohol. Sample was evidently an alcoholic preparation of eucalyptus.

Lab. No. 5129, Insp. No. 9012. "Saxolite." Manufactured by the Dearborn Supply Company, Chicago. Directions are to dissolve saxolite in witch hazel and apply. This lotion is recommended by the manufacturers to remove wrinkles. Saxolite was found to be composed of 52 per cent of alum and 48 per cent of magnesium sulphate.

Lab. No. 5130, Insp. No. 9013. "Kulux." Distributed by the Kulux Manufacturing Company, Rochester, N. Y. Retailer, O. G. Clafin, Kansas City. Kulux is declared by the manufacturer to immediately beautify the neck, arms, hands and shoulders; to instantly obliterate tan, roughness and discoloration of any kind; to restore a youthful appearance to the skin, no matter how old one may be. Declared to be manufactured in Paris and imported exclusively by the Kulux Manufacturing Company, Rochester, N. Y. The directions are to add one teaspoonful of the preparation to a basin of water and apply. Sample consists of a perfumed mixture of a dilute aqueous solution of glycerin, 69.8 per cent of zinc oxide and 30.2 per cent bismuth subcarbonate.

Lab. No. 5131, Insp. No. 9014. "Marlax." Manufactured by Sheffield Pharmacal Company, Chicago. Retailer by C. Leavengood, Rosedale. Declared by the manufacturers to lighten the color of any except black hair. Will keep the hair light and give a beautiful golden tint to blond hair. Marlax consists of German Chamomile. Contents of the package weighed 29 grammes and retailed at \$1.

Lab. No. 5132, Insp. No. 9015. "Pure Mercolized Wax." Manufactured by Dearborn Supply Company, Chicago. Preparation was declared by the manufacturer to remove thin veil of half-dead cuticle and leave the skin bright, clear and beautiful, causing the

user to look years younger and much prettier. Declared to cause all facial blemishes, as freckles, tan, liver spots, pimples, etc., to disappear. The preparation was found to contain about 10 per cent each of zinc oxide and ammoniated mercury, mixed with a mineral base having a consistency midway between petrolatum and paraffin.

Lab. No. 5155, Insp. No. 9026. "Extract of Witch Hazel." E. B. Walker & Son, Topeka. Sample contained 14.7 per cent alcohol. No methyl alcohol present.

Lab. No. 5161, Insp. No. 9033. "Bay Rum." M. A. Funchess, Topeka. Contained 51.5 per cent alcohol. Negative test for methyl alcohol.

Lab. No. 5171, Insp. No. —. "Caparine." De Kalb Chemical Company, De Kalb, Ill. Declared to be a speedy cure for sick and nervous headache, neuralgia, grippe or sleeplessness. Declared to contain $3\frac{1}{2}$ gr. acetanilid and no opiates. Caparine was found to contain rhubarb, capsicum and acetanilid.

Lab. No. 5173, Insp. No. 9037. "Bay Rum." Kendall & Peters, Newton. Contains 76.5 per cent alcohol. Negative test for methyl alcohol.

Lab. No. 5175, Insp. No. 9039. "Soap Liniment." Sample contained 3.8 gms. of camphor in 100 cc. of the liniment. Specific gravity of sample, 0.8857. Soap, 5.25 gms. in 100 cc.

Lab. No. 5186, Insp. No. 9050. "Ext. of Witch Hazel." Cook & Hodge, Sterling. Sample contained 13.5 per cent alcohol, and gave negative test for methyl alcohol.

Lab. No. 5190, Insp. No. 9054. "Tr. of Aconite." J. B. Ira & Son, Lyons. Insufficient quantity for assay.

Lab. No. 5207, Insp. No. 9069. "Tr. of Nux Vomica." Cole & Thomas, Wichita. Insufficient quantity for analysis

Lab. No. 5176, Insp. No. 9040. "Swt. Spirit of Nitre." Charles Johnson, Newton. Contained 3.5 per cent of ethyl nitrate. Preparation was dispensed in transparent bottles.

Lab. No. 5145. "Haynox." Manufactured by the Haynox Company, Birmingham, Mich. Preparation declared by the manufacturer to cure hay fever, to contain none of the dangerous drugs—cocaine, carbolic acid, belladonna, nitre, etc. Haynox was found to be yellow powder containing ginger and milk sugar. Accompanying Haynox was a preparation called "Sorennox Jelly." Sorennox was found to be an ordinary ointment base containing a small amount of volatile oils

PELLAGRA IN KANSAS.

Thus far this season there have been eight known cases of pellagra in this state, with two deaths, distributed by counties as follows: Allen county, three cases; Labette county, two cases; Montgomery, Chautauqua and Meade counties, one case each. In addition, there are at least two suspects, one in Labette county and one in Bourbon county.

The cause and method of dissemination of the disease is not yet definitely known. Three theories are set forth by their various supporters: First, the so-called maize theory, championed by the great alienist Lombroso and many other able investigators. The eating of spoiled corn products as the cause of the disease has had a serious set-back since the disease has gained a foothold in this country, for many cases have developed in which there was an entire absence of eating corn in any form; whereupon, an Atlanta physician has promulgated the cotton-seed oil theory—beautiful in theory, yet unproven in practice.

In the Kansas cases there is no history of unusual indulgence in either corn products or cotton-seed oil, more than the average Kansas citizen who occasionally eats corn bread or a bowl of corn-meal mush, or who occasionally eats foods that have been prepared or cooked with cotton-seed oil, or lard compounds.

There remains the other theory, known as the Sambon theory, so named after an English physician by that name, who spent last year and the present year in Italy and Hungary investigating the disease. He is of the belief that the disease is due to a micro-organism which is conveyed through the medium of the bite of the so-called sand-fly.

Immediately upon the discovery of the first cases in Labette county, the writer requested Prof. S. J. Hunter, entomologist at the University, to make an investigation to discover whether or not the sand-fly could be found in the neighborhood of the cases. The search revealed the presence of the sand-fly and large numbers of the larvæ were found in the riffles of the Neosho river, near Oswego. Similarly flies were found in Allen county and Montgomery county, so the possibility of the fly being the infectious agent was, at least, proven.

Death of School Teacher from Vaccination a Fake.

A report from Flint, Mich., which appeared in the newspapers of the country about six weeks ago, was to the effect that a certain woman, presumably a school teacher, had died from the result of vaccination for smallpox.

Inquiry of the *state registrar* of that state as to the cause of death of this woman as given in the death certificate brings the following report:

"The death certificate of this woman shows that she died of chronic nephritis, but says nothing whatever about vaccination. The article in the newspaper, therefore, is absolutely without justification."

Michigan has one of the best enforced Vital Statistics Laws in the United States, and the reports there placed on file can be relied upon.

Since the Federal government has assumed absolute supervision over all manufacturing plants making antitoxins, vaccines, etc., requiring tests for their potency and purity before being placed upon the market, there is absolutely no danger in the use of smallpox vaccine, in so far as the vaccine itself is concerned.

Everyone owes it to themselves and their children that they obtain immunity from smallpox, which can be done at so little expense and pain, and which 110 years of trial and practice have proven its value and worth as a preventative of smallpox.

STATE WATER SURVEY NO. 11.

OCTOBER 20, 1911.

By E. H. S. BAILLY, Ph. D., Director, and C. C. YOUNG, M. S., Chemist.

Following are analyses of city supplies made in the water laboratory since the date of the last report. Accompanying these analyses is a table giving the source and location of municipal water supplies in the state of Kansas, with information regarding the character of purification given surface supplies. This report completes the survey of city supplies, with the exception of six, from whom no reply could be obtained from letters addressed to the city officials. The May and June BULLETINS of the State Board of Health contain the other analyses not given in this report.

SANITARY ANALYSIS OF CITY SUPPLIES. (Parts per million.)

Number	City.	Dates (1911)	Nitrogen in free NH ₃	Nitrogen in albuminoid NH ₃	Nitrogen in NO ₂	Nitrogen in NO ₃	Chlorine.....	Solids.....	Sulfates (SO ₄)..	Iron.....	Oxygen consumed.....
325	Alma.....	6-5	0.284	0.124	None.	20.00	456	18.76	2.5	None.	None.
326	Alwood.....	6-12	0.084	0.098	None.	22.00	587	76.20	0.8	None.	None.
327	Anthony.....	7-17	0.018	0.264	0.800	60.00	505	135.82	2.0	0.84	0.56
328	Argentine.....	10-9	0.090	0.142	Trace.	14.00	480	193.00	3.5	0.56	None.
329	Blue Rapids.....	7-14	0.024	0.062	Trace.	22.00	420	87.80	0.5	0.78	None.
330	Beloit.....	10-3	0.048	0.096	Trace.	162.00	654	79.60	0.5	0.78	None.
331	Baldwin.....	9-15	0.310	0.304	0.800	14.40	164	89.16	0.0	1.68	1.68
332	Council Grove: a M. W. Ferry.....	6-5	0.094	0.228	0.100	10.00	341	53.80	0.7	2.16	2.16
	b T. B. Haslam.....	6-5	0.138	0.138	None.	10.00	341	53.80	0.7	2.40	2.40
333	Caldwell.....	6-24	0.180	0.114	Trace.	884.00	2584	1667.60	0.5	1.80	1.80
334	Cherokee.....	7-3	0.134	0.168	None.	92.00	560	70.24	0.5	1.80	1.80
335	Cottonwood Falls.....	9-27	0.014	0.070	0.001	13.80	314	08.60	1.5	0.80	0.80
336	Clay Center.....	9-29	0.058	0.060	0.005	86.60	1293	425.00	0.3	0.876	0.876
337	Coffeyville.....	9-31	0.082	0.312	0.080	12.00	281	61.60	1.5	4.07	4.07
338	Clyde.....	9-22	0.122	0.040	None.	20.00	343	88.80	0.0	1.80	1.80
339	Chetopa.....	6-5	0.218	0.084	None.	220.00	805	00.00	0.3	None.	None.
340	Cedar Vale.....	10-10	0.022	0.184	None.	8.00	304	29.78	0.7	1.88	1.88
341	Downs.....	6-5	0.042	0.123	Trace.	24.00	488	67.12	0.5	0.12	0.12
342	Eureka.....	9-27	0.015	0.044	None.	11.00	282	Trace.	0.3	None.	None.
343	Emporia.....	7-29	0.110	0.280	0.300	14.00	300	Trace.	0.3	3.00	3.00
344	Ellsworth: a Hydrant.....	9-27	0.090	0.094	0.200	174.00	888	179.86	1.5	1.90	1.90
	b City well.....	9-27	0.122	0.122	None.	167.60	853	190.68	2.0	1.80	1.80
345	Elkhart.....	10-5	1.000	0.274	0.600	13.80	341	None.	2.90	2.90	2.90
346	Fort Scott: a Tap at city jail.....	7-17	0.204	0.364	None.	5.00	249	23.04	1.0	2.63	2.63
	b Above P. H. dam.....	7-17	0.620	0.320	None.	6.00	245	.....	1.5	3.24	3.24
347	Florence.....	8-27	0.034	0.108	None.	62.60	427	290.60	0.5	0.56	0.56
348	Frontenac.....	8-20	0.108	0.108	None.	106.40	331	22.80	2.5	2.04	2.04
349	Frankfort.....	8-25	0.124	0.086	0.004	12.20	367	100.00	0.0	None.	None.
350	Girard.....	7-13	0.066	0.004	None.	645.00	1829	112.80	0.0	0.00	0.00
351	Greenleaf.....	5-8	0.174	0.102	None.	27.00	425	49.84	0.1	0.28	0.28
352	Harmon.....	9-23	0.080	0.084	0.700	17.00	190	20.20	Trace.	Trace.	Trace.
353	Hill City: a Saly's well.....	5-13	0.028	0.102	0.001	22.00	558	143.60	0.5	0.86	0.86
	b Sandstone well.....	5-13	0.046	0.062	None.	8.00	291	Trace.	1.0	None.	None.
354	Hanson.....	5-29	0.180	0.184	0.008	12.00	275	52.00	1.5	0.60	0.60
355	Harper.....	6-12	0.084	0.084	None.	15.00	238	15.76	0.3	0.3	0.3

386	Holmington: a E. W. at pump station.	6-20	0.088	0.060	1.000	None.	61.00	465	80.40	0.7	0.12
387	b New well.	6-20	0.064	0.060	0.800	None.	16.00	837	Trace.	1.6	None.
388	Humboldt.	10-2	0.012	0.300	0.700	0.002	9.00	239	44.40	1.0	0.86
389	Hutchinson.	10-6	0.076	0.110	Trace.	0.001	288.00	820	162.00	1.0	1.44
390	Hays	10-9	0.098	0.064	8.000	Trace.	28.00	486	28.16	Trace.	0.186
391	Independence	9-13	0.050	0.360	1.000	Trace.	10.08	171	Trace.	0.0	10.08
392	Junction City	9-16	0.070	0.116	1.000	None.	84.60	326	61.04	0.2	0.97
393	Jenmore.	9-16	0.022	0.046	2.600	None.	12.00	405	00.00	0.0	0.32
394	Kinsley.	4-25	.....	.....	Trace.	None.	119.00	1087	666.40	Trace.	1.20
395	Stow.	6-12	0.080	0.128	5.000	0.001	40.00	906	169.64	0.6	1.20
396	Annaas City, Kan.	10-3	0.144	0.180	1.000	None.	12.00	365	143.80	0.3	2.23
397	Lebanon.	6-10	0.004	0.160	0.800	None.	12.00	497	75.60	Trace.	1.40
398	Lyon.	10-2	0.012	0.032	2.600	None.	66.00	444	33.00	Trace.	0.74
399	Lawrence	8-19	0.284	0.252	0.700	None.	60.80	457	25.16	0.5	3.26
400	Lucas	10-2	0.040	0.060	1.000	None.	312.40	1068	107.60	Trace.	1.02
401	La Harpe	9-29	0.800	0.060	0.800	0.006	11.60	133	19.00	3.0	0.48
402	Liberal†	9-30	0.084	0.060	8.700	None.	21.00	339	67.60	None.	None.
403	Manato.	9-21	0.082	0.194	8.700	None.	40.00	338	127.20	0.7	0.96
404	Medicine Lodge.	9-5	0.043	0.222	7.800	Trace.	18.00	217	26.16	0.0	3.12
405	Marysville.	9-5	0.063	0.068	None.	None.	28.00	844	29.72	0.6	None.
406	Marysville.	9-25	0.063	0.068	90.000	None.	85.00	828	146.76	0.3	0.86
407	West Mineral.	9-30	1.000	0.112	None.	0.014	39.60	828	61.60	0.3	2.07
408	Osage City.	9-23	0.068	0.304	None.	None.	7.00	231	50.96	0.7	0.92
409	Osawatomie.	9-20	0.068	0.214	None.	None.	22.00	250	32.40	0.0	4.864
410	Olathe.	9-20	0.068	0.244	1.000	None.	18.80	256	33.20	4.0	3.40
411	Peru.	5-26	0.063	0.168	0.800	0.001	18.60	406	32.70	2.0	5.59
412	Phillipsburg.	9-20	0.060	0.228	0.200	None.	17.28	191	13.48	0.0	0.49
413	Sedan.	10-2	0.018	0.128	5.000	0.010	34.40	597	63.10	0.3	1.92
414	St. Johns	6-5	0.004	0.060	0.300	0.010	80.00	877	140.40	0.0	None.
415	St. John.	7-14	0.042	0.060	14.000	Trace.	28.00	571	13.80	0.3	1.06
416	Stirling.	7-29	0.042	0.132	6.000	Trace.	180.00	541	110.40	None.	None.
417	Smith Center.	10-10	0.064	0.244	1.500	None.	13.00	524	71.24	5.0	2.23
418	Smock.	10-18	0.062	0.068	0.600	Trace.	6.00	984	Trace.	0.0	3.44
419	Valley Falls	10-9	0.084	0.204	2.500	Trace.	19.00	924	26.16	8.5	None.
420	Warren.	6-12	0.036	0.064	3.500	0.001	76.00	592	122.76	0.1	None.
421	Washington.	6-12	0.040	0.124	None.	None.	568.00	1448	438.40	0.3	2.76
422	Washington.	6-25	0.068	1.080	1.500	0.400	33.00	1294	605.24	2.5	None.
423	a 40-foot well, in ravine.	6-25	0.370	0.290	0.800	0.600	83.00	1259	598.96	0.3	None.
424	b 80-foot well, on hill.	9-25	0.084	0.228	1.000	None.	9.00	188	29.70	8.0	0.72
425	Waverille.	8-23	0.144	0.186	8.000	1.000	22.60	610	28.40	0.7	4.23
426	Westmoreland.	8-23	0.068	0.118	14.000	0.002	326.40	1160	98.00	0.7	0.96
427	Wilson.	9-27	0.028	0.032	6.700	None.	13.00	278	21.00	0.5	None.
428	Waverille.	9-18	0.018	0.040	4.000	None.	16.80	509	28.20	2.0	0.42
429	Yates Center.	7-3	0.092	1.170	0.800	None.	16.00	210	77.60	6.0	5.04

* Small sample. † Two samples, taken at different times.

SOURCES OF GROUND-WATER SUPPLIES.

D=deep wells; S=shallow wells; Sp=springs.

Serial No.....	CITY.	Deep wells, shallow wells, or springs,.....	Serial No.....	CITY.	Deep wells, shallow wells, or springs.....
1	Wichita.....		59	Peabody.....	
2	Topeka.....		60	Osborne.....	
3	Pittsburg.....		61	Frankfort.....	
4	Hutchinson.....		62	St. Marys.....	
5	Lawrence.....		63	Harper.....	
6	Salina.....		64	Hanover.....	
7	Emporia.....		65	Phillipsburg.....	
8	Newton.....		66	Liberal.....	
9	Arkansas City.....		67	Lincoln.....	
10	Junction City.....		68	Smith Center.....	
11	Wellington.....		69	Bonner Springs.....	
12	Argentine.....		70	Washington.....	
	See Kansas City.....		71	Kiowa.....	
13	Manhattan.....		72	Stockton.....	
14	Great Bend.....		73	St. John.....	
15	Concordia.....		74	Erie.....	
16	Ablene.....	Sp	75	Augusta.....	
17	Dodge City.....		76	Kinsley.....	
18	El Dorado.....		77	Mankato.....	
19	McPherson.....		78	Ellis.....	
20	Columbus.....		79	Hillsboro.....	
21	Garden City.....		80	Oberlin.....	
22	Hilton.....		81	Clyde.....	
23	Herington.....		82	Florence.....	
24	Clay Center.....		83	Colby.....	
25	Frontenac.....		84	Conway Springs.....	
26	Hawatha.....		85	Clifton.....	
27	Girard.....		86	Greenleaf.....	
28	Beloit.....		87	Lebanon.....	
29	Pratt.....		88	Marquette.....	
30	Larned.....		89	Waverly.....	
31	Kingman.....	Sp	90	Enterprise.....	
32	Anthony.....		91	Atwood.....	
33	Eureka.....		92	Lucas.....	
34	Weir.....		93	Bunkerhill.....	
35	Scammon.....		94	Meade.....	
36	Caldwell.....		95	Ashland.....	
37	Hays.....		96	Delphos.....	
38	Belleville.....		97	Kensington.....	
39	Lindsborg.....		98	Cawker City.....	
40	Wamego.....		99	Scandia.....	
41	Sterling.....		100	Cottonwood Falls.....	
42	Marysville.....		101	Havenaville.....	
43	Goodland.....		102	Jamestown.....	
44	Marion.....		103	Wakefield.....	
45	Seneca.....		104	Wilson.....	
46	Lyons.....		105	Plainville.....	
47	Norton.....		106	Wa Keeney.....	
48	Ellsworth.....			Sharon Springs.....	
49	Sabetha.....			Mound Ridge.....	
50	Blue Rapids.....			Ellinwood.....	
51	Minneapolis.....			Hollywood.....	
52	Mineral.....			Almena.....	
53	Hotsington.....			Halstead.....	
54	Chetopa.....			Oakley.....	
55	Stafford.....			Udall.....	
56	Downs.....			Logan.....	S
57	Cherokee.....	D		Kirwin.....	
58	Baxter Springs.....	D			

SOURCE OF SURFACE SUPPLIES.

R = river, no dam; RD = river, with dam; AL = artificial lake.

Serial No.	CITY.	River, no dam; river, with dam; or artificial lake.	Serial No.	CITY.	River, no dam; river, with dam; or artificial lake.
1	Kansas City.....	R	22	Council Grove.....	RD
2	Leavenworth.....	R	23	Osage City.....	AL
3	Coffeyville.....	R	24	Oswego.....	AL
4	Atchison.....	R	25	Humboldt.....	AL
5	Independence.....	R	26	Burlington.....	AL
6	Parsons.....	RD	27	Garnett.....	RD
7	Fort Scott.....	R	28	La Harpe.....	AL
8	Chanute.....	R	29	Yates Center.....	AL
9	Iola.....	R	30	Pleasanton.....	AL
10	Ottawa.....	R	31	Russell.....	AL
11	Winfield.....	RD	32	Empire.....	RD
12	Galena.....	RU	33		
13	Cherryvale.....	AL	34	Cedar Vale.....	R
14	Rosedale.....	R	35	Peru.....	
15	Caney.....	RD	36	Valley Falls.....	R
16	Horton.....	AL	37	Baldwin.....	AL
17	Faola.....	RD	38	Gas.....	R
18	Osawatimie.....	R	39	Medicine Lodge.....	
19	Fredonia.....	RD	40	Sedan.....	
20	Olathe.....	AL	41	Petrolia.....	
21	Neodesha.....	R			

PURIFICATION OF SURFACE-WATER SUPPLIES.

NP = no purification; PS = plain sedimentation; SC = sedimentation with coagulation;
F = filtered.

Serial No.	CITY.	Purification.....	Serial No.	CITY.	Purification.....
1	Kansas City.....	F	21	Neodesha.....	F
2	Leavenworth.....	SC	22	Council Grove.....	F
3	Coffeyville.....	PS	23	Osage City.....	F
4	Atchison.....	SC	24	Oswego.....	F
5	Independence.....	F	25	Humboldt.....	F
6	Parsons.....	F	26	Burlington.....	F
7	Fort Scott.....	SC	27	Garnett.....	F
8	Chanute.....	PS	28	La Harpe.....	NP
9	Iola.....	SC	29	Yates Center.....	NP
10	Ottawa.....	SC	30	Pleasanton.....	F
11	Winfield.....	F	31	Russell.....	F
12	Galena.....	NP	32	Empire.....	NP
13	Cherryvale.....	NP	33	Logan.....	NP
14	Rosedale.....	SC	34	Cedar Vale.....	NP
15	Caney.....	NP	35	Peru.....	NP
16	Horton.....	F	36	Valley Falls.....	NP
17	Faola.....	PS	37	Baldwin.....	F
18	Osawatimie.....	PS	38	Gas.....	SC
19	Fredonia.....	PS	39	Medicine Lodge.....	NP
20	Olathe.....	PS	40	Sedan.....	NP

Amendments to Regulations Under Food and Drugs Law, February 14, 1907.

DEPARTMENT OF THE STATE BOARD OF HEALTH,
DIVISION OF FOOD AND DRUGS,
TOPEKA, KANSAS.

At the regular quarterly meeting of the Kansas State Board of Health, held in the city of Manhattan, Kan., October 20-21, 1911, the following amendments to the regulations for the enforcement of the Kansas Food and Drugs Law of February 14, 1907, were unanimously adopted:

Resolved, That regulation 5, paragraph "b," be amended as follows:

(b). Proprietary medicinal preparations and similar medicinal products are required to conform in composition to the freshly prepared non-deteriorated article, and to conform to the claims made for the preparation as to therapeutic properties, quality and strength.

Resolved, That regulation 11, paragraph "b," be amended to read as follows:

(b). The sale of slaughtered undrawn poultry, game or fish is prohibited.

Resolved, That regulation 11 be further amended by making a new paragraph known as paragraph "d," which shall read as follows:

(d). In the case of eggs from cold storage of more than two weeks, or which have been packed in any preserving substance, the wholesale or retail package, when delivered to the purchaser, shall bear a label designating such storage or preservation.

Resolved, That regulation 14, paragraph "b," be amended by striking out all of the paragraph after the word "food," in line 20, making it then read as follows:

(b). The raw material used in the manufacture of food and drug products shall be sound, wholesome and free from decomposition. The meat products shall be sound, wholesome and fit for human food, and shall be made from sound and healthy animals. Carcasses of animals too immature to produce wholesome meat, or unborn and stillborn animals, carcasses of pigs, kids and lambs under three weeks of age and of calves less than four weeks of age are condemned as unsuitable for food. Carcasses of animals in advanced stages of pregnancy, also carcasses of animals which have within ten days given birth to young, are condemned as unsuitable for food, but where there is no evidence of septic poisoning in such carcasses they may be rendered into lard or tallow if so desired. All animals that die in abattoirs, pens and those in a dying condition before slaughtering shall not be used as food.

Resolved, That regulation 15, paragraph "e," be amended to read as follows:

(e). Descriptive matter upon the label shall be free from any statement, design or device regarding the article, or its therapeutic properties, or the ingredients or substances contained therein, or quality thereof, or place of origin, which is false or misleading in any particular. In the case of materials used in the preparation of foods, or medicinal preparations, descriptive matter upon the label shall be free from any false or misleading statement in regard to the composition or ingredients of the food, or therapeutic properties of the medicinal product, prepared by the use of such materials.

Resolved, That paragraph "f" of regulation 15 be amended to read as follows:

(f). An article containing more than one food product or an article containing more than one active medicinal agent is misbranded if named after a single constituent. In the case of drugs, the nomenclature employed by the United States Pharmacopoeia and the National Formulary shall obtain, except as provided in regulation 5. If not official or standardized, an article is misbranded if the name suggests that it contains a substance not present in the article, or conveys a false impression as to its origin, place of manufacture or production, or therapeutic properties, quality or strength.

Resolved, That paragraph "h" of this same regulation be amended by adding to it sub-division "3," which will make it read as follows:

(3). Vinegars artificially colored or made from materials specially chosen to impart a color similar to that of cider vinegar are held to be imitations of cider vinegar unless *each package, wholesale and retail, as delivered to the purchaser*, is distinctly marked by a label which states the true nature of the article.

Resolved, That regulation 35, Food Standards B, Milk and Its Products, paragraph 6 thereof, be amended to read as follows:

6 *Condensed Milk, Evaporated Milk*, is milk from which a considerable portion of water has been evaporated.

(1). It is prepared by evaporating the fresh, pure, whole milk of healthy cows, obtained by complete milking and excluding all milkings within 15 days before calving and 7 days after calving, provided at the end of this 7-day period the animals are in perfectly normal condition.

(2). It contains such percentages of total solids and of fat that the sum of the two shall be not less than 34.3 per cent and the percentage of fat shall be not less than 7.8 per cent.

(3). It contains no added butter or butter oil incorporated either with whole milk or skimmed milk or with the evaporated milk at any stage of manufacture.

Resolved, That paragraph 7 of the same regulation and sub-division, under Milks, be made to read as follows:

7. *Sweetened Condensed Milk*, is milk from which a considerable portion of water has been evaporated, and to which sugar (sucrose) has been added.

(1). It is prepared by evaporating the fresh, pure, whole milk of healthy cows, obtained by complete milking and excluding all milkings within 15 days before calving and 7 days after calving, provided at the end of this 7-day period the animals are in perfectly normal condition.

(2). It contains such percentages of total milk solids and of fat that the sum of the two shall be not less than 34.3 per cent and the percentage of fat shall be not less than 7.8 per cent.

(3). It contains no added butter or butter oil incorporated either with whole milk or skimmed milk or with the evaporated milk at any stage of manufacture.

¶ *Resolved*, That regulation 35, part II, sub-division D, section "b," Flavoring Extracts, paragraphs 10, 13 and 13a, be amended to read as follows:

10. *Terpeneless Extract of Lemon, Soluble Extract of Lemon, Soluble Lemon*, are flavoring extracts prepared by shaking oil of lemon with dilute alcohol, U. S. P., or by dissolving terpeneless oil of lemon in dilute alcohol, U. S. P., and contain not less than two-tenths (0.2) per cent by weight of citral derived from oil of lemon

13. *Terpeneless Extract of Orange, Soluble Extract of Orange, Soluble Orange*, are flavoring extracts prepared by shaking oil of orange with dilute

alcohol, or by dissolving terpeness oil of orange in dilute alcohol, and correspond in flavoring strength to orange extract.

13a. *Terpeness Oil of Orange* is oil of orange from which all or nearly all of the terpenes have been removed.

DISINFECTANTS.

Resolved. That the following definition of the word "disinfectant" appear as paragraph 3 under regulation 36, under the caption "Medicinal Preparations":

REGULATION 36.

Medicinal Preparations.

3. An article or substance which is designated as "germicide" or "disinfectant" in the state of Kansas will be held to be of such a character that it will actually kill any non-spore bearing bacterium within six hours under the conditions prescribed for its use. If directions for use are not expressly stated, those conditions usually found in living rooms will be assumed for its application.

The terms "germicide" and "disinfectant" are used interchangeably to mean substances that actually destroy, and not merely inhibit the growth of bacteria.

I hereby certify that the above amendments to the regulations, herein set forth, were unanimously adopted by the Kansas State Board of Health, and ordered printed in the official state paper, and that the above are true copies of the same.

KANSAS STATE BOARD OF HEALTH.

Approved by the Board October 21, 1911.

S. J. CRUMBINE, M. D., *Secretary.*

Disinfectants and Standards for Same.

The ignorance of the public, and even of some members of the medical profession, respecting disinfectants gives an opportunity for manufacturers of spurious products of this class to take advantage of them. If disinfectants did not play such an important role in preventative medicine the ignorance and confusion which exists in regard to the term would not be so important, but inasmuch as the safety of the individual and of entire communities is oftentimes dependent upon this class of agents, it has been deemed wise by the members of the Board of Health to consider seriously the question of some reliable standard for them. A committee of the State Board of Health was appointed to consider the above and at its last meeting discussed the problem of standardization of disinfectants. The report of the committee embraced, among other things, the information gained through correspondence with those who were actively engaged in the standardization of disinfectants, and those who were investigating these standards in research laboratories.

A letter bearing upon this subject, recently received from W. H. Puckner, secretary of the Chemical Laboratory of the A. M. A., and secretary of the Council on Pharmacy and Chemistry, states that it is his opinion that the method of Anderson and McClintic (*Jour. Infec. Dis.*, Jan. 1911, viii, No. 1) is the standard that, in the light of our present knowledge, should be given preference. Mr. Puckner further states: "The Council of the A. M. A. has obtained the coöperation of the Hy-

gienic Laboratory of the United States Public Health and Marine Hospital Service and will attempt to secure the adoption of a standard method for the valuation of germicides and disinfectants. With this idea in view it has appointed a committee consisting of Dr. F. G. Novy, of the University of Michigan, Dr. John F. Anderson, of the Hygienic Laboratory, and Dr. Wilbur E. Post, assistant professor of medicine, Rush Medical College, Chicago."

Until this committee has reported it would be premature to decide on any one method of standardization, but to employ those which are now commonly used.

The method of Anderson and McClintic, to which Mr. Puckner refers, may be very briefly referred to. It consists, first, of a standard culture of bacteria (*B. typhosus* or *B. coli*); second, of several dilutions of phenol; and third, of several dilutions of the disinfectant to be examined for standardization. Several standard solutions of phenol are made as control solutions and a number of dilutions of the unknown disinfectant are also made. These are placed in sterile tubes and a quantity of bacterial culture added. These are tested at two and one-half minute intervals. The "phenol coefficient" for the disinfectant of unknown strength is determined by dividing the weakest strength of disinfectant that kills in two and one-half minutes by the weakest strength of the phenol that kills in two and one-half minutes. The same procedure is followed with the weakest strength that kills in each case in fifteen minutes, employing the disinfectant sample and the phenol. The two coefficients thus obtained are added and the mean of these phenol coefficients becomes the coefficient of the sample under examination.

For example: Using *B. typhosus* (of a vigorous strain made by continuous transplanting) as a standard, a sample of the disinfectant shows that the weakest dilution that kills in two and one-half minutes is 1-1300. The weakest dilution of phenol that will do the same is 1-80. Dividing 1300 by 80, we get 16.25 as the coefficient of the two and one-half minute sample. Then as a second experiment, the weakest solution of the sample of disinfectant that kills in fifteen minutes is found to be 1-1500. The weakest solution of phenol that will kill in the same time is 1-100. Then, 1500 divided by 100 gives 15. Now, adding 16.25 to the 15 we obtain 31.25, which divided by 2 gives 15.62 as a coefficient for the sample of disinfectant.

THE IDEAL DISINFECTANT.

We are indebted to one of our largest manufacturing houses for the following statement as to what an ideal disinfectant should be.*

"In connection with the query as to what is an ideal disinfectant, we must consider the several virtues which a germicide may possess, and which, although not all of equal import, are often adduced in favor of alleged disinfectants as though they were.

"(a). It should possess a high germicidal power. This is undoubtedly by far the most important qualification, as it is obvious that should a disinfectant not possess marked germicidal properties, any other laudatory characters that might be pleaded on its behalf will not warrant its claim

* We have not obtained permission to use the name of the manufacturing house, and hence we have omitted their name from their valuable contribution.

to the appellation of disinfectant. Germicidal efficiency must therefore be a *sine qua non*.

"(b). It should be capable of being used in the presence of organic matter without any great diminution of its germicidal power. A disinfectant which becomes a mere placebo both in the disinfection of faeces and urine may be eminently suitable for disinfecting the hands; but it is evident that such a preparation will have but a limited application when compared with a disinfectant against which this objection cannot be sustained. The inability to conform to this requirement is a very strong point against chloride of lime and other oxidizing agents, and against mercuric chloride, the employment of which, in some instances, affords a farcical display of ignorance on the part of those responsible. Mercuric chloride is precipitated by albumin, soap, etc., and is, moreover, readily converted into an insoluble sulphide when brought in contact with organic matter containing sulphur, which is quite inert so far as germicidal action is concerned. In this connection it is advisable to emphasize the desirability of having a disinfectant which is capable of being used with soap. Floors and other articles, as well as the skin, are often washed with soap before disinfection, and where it is necessary to get rid of all traces of soap before applying the disinfectant, precious time is often wasted. Moreover, it is not always possible to obtain sufficient hot water with which to remove the soap before applying the disinfectant—in district nursing this want is felt most acutely.

"(c). It should be homogeneous and capable of retaining its homogeneity. A preparation which in a cask will separate out into what has been aptly described as "a thin serum at the top and something like putty at the bottom," carries its own condemnation.

"(d). It should yield a solution or emulsion in all proportions. This is too obvious to require further comment.

"(e). It should be innocuous to man and the higher animals. Fatal cases are constantly being reported owing to the accidental or wilful ingestion of such toxic substances as carbolic acid and corrosive sublimate. In many cases poisonous disinfectants are handled and administered by persons unacquainted with their toxic nature; and in the interests of humanity it is desirable that when poisonous disinfectants can be replaced by innocuous ones, the latter should be employed.

"(f). It should be free from corrosive action on the skin and on metals. A disinfectant having a corrosive action on metallic surfaces is obviously inadmissible for disinfecting instruments or metallic objects, and cannot be stored in metallic receptacles or used in sprayers, etc., having metal fittings. The objection to a disinfectant having caustic action on the skin is patent, and it is preferable to choose one that, further, has no action on the mucous membrane.

"(g). It should have the power of penetration. A disinfectant that may easily kill bacteria when the latter are isolated, and yet has not the property of so acting when the bacteria are more or less enveloped in a covering of animal matter, obviously fails, and it is because of their inefficiency in this respect that disinfectants of a saponaceous nature have become so popular of recent years.

"(h). It should be reasonable in price when diluted to a working solution. There appears to be a great demand among certain sanitary authorities for a 'concentrated' (sic) disinfectant 'at a shilling a gallon,' and it is probable that a disinfectant at this price that could not be diluted with four times its volume of water would be received by these authorities with greater favor than one at four shillings a gallon that would bear dilution with four hundred volumes of water.

"(i). It should be a deodorant. The best way to eradicate an evil is to remove the cause, and this applies to smells as well as to other evils. A deodorant that is not a disinfectant is worthless from a utilitarian standpoint, and is useful only to allay fastidious quaims. A deodorant such as permanganate which deodorizes by an oxidation action has been shown to oxidize the organic matter before exercising its germicidal

action, and therefore its employment necessitates the use of a larger quantity of the disinfectant than is necessary to oxidize all the organic matter. Other deodorants, such as formalin and sulphur dioxide, have an irritating action on the mucous membranes, which for many purposes renders them objectionable. Where a disinfectant is employed in the form of a powder, the base of such a preparation should be composed of lime, which has a high capacity for absorbing sulphuretted hydrogen and other gases having an objectionable smell. Unfortunately, the use of this base is inadmissible with carbolic acid, but it can be employed with certain coal tar disinfectants."

A CONCISE DEFINITION OF DISINFECTANTS.

The Board of Health, after considering the standards, adopted the following as their definition of disinfectants, and it will be understood in the future that articles upon the market representing themselves as such will be expected and required to meet the qualifications stated in this definition.

DISINFECTANT.—An article or substance which is designated as "germicide" or "disinfectant" in the state of Kansas will be held to be of such a character that it will actually kill any non-spore-bearing bacterium within six hours under the conditions prescribed for its use. If directions for use are not expressly stated, those conditions usually found in living rooms will be assumed for its application.

Within the meaning of this definition the terms "germicide" and "disinfectant" are used interchangeably to mean substances that actually destroy, and not merely inhibit the growth of bacteria.

L. E. SAYRE,
E. H. S. BAILEY,
J. T. WILLARD,
S. J. CRUMBINE,
Committee.

The Opening of the University of Kansas Medical Hospital.

On Monday, October 23, the new hospital, at Rosedale, of the medical school of the University of Kansas was opened to receive patients, in conformity to chapters 292, 293 and 294 of the Laws of 1911.

Chapter 292 provides that the "child of any indigent poor person of the state of Kansas, which child shall be afflicted with any deformity or malady that may be cured by surgical operation or by hospital treatment," may be received by the hospital upon the recommendation of the county board of health.

Chapter 293 provides that any indigent poor person resident of the state of Kansas may be received by the hospital for treatment or surgical operation upon the recommendation of the county board of health, if, in their judgment or the judgment of any reputable physician, the case is curable or that such hospital treatment would be a benefit to the patient.

Chapter 294 provides that obstetrical patients that are public

charges may be received by the hospital upon contract with the county board of health.

Blanks will be furnished upon request, upon which application should be made by the attending physician of any indigent poor of the state, who is of the belief that treatment in the hospital or surgical operation will be instrumental in curing or improving the health of the patient.

It can be seen that from the operation of these beneficent laws the physicians of the state will be relieved of much charity work, which, while given to the state's poor uncomplainingly, yet takes up much valuable time which the busy practitioner cannot well afford to give. On the other hand, the patients and their friends may be assured of the best care and treatment that trained and skillful physicians, surgeons and nurses and a modern up-to-date hospital can provide. The most complete and modern methods and instruments of precision are at the command of the hospital staff, which, with the new and modern hospital just completed, will afford the indigent poor of the state the best care and treatment that it is possible to give them.

The medical department of the University of Kansas pledges itself to the policy of "the best is none too good for the indigent poor of the state."

On the evening of Monday, October 23, a reception was held at the hospital by the Board of Regents of the University and the faculty of the school of medicine, at which a large number of the physicians of the two Kansas Cities and the alumni of the school were present.

Epidemic Poliomyelitis in Kansas in 1911.

For the past two years poliomyelitis has been epidemic in Kansas, about 90 cases occurring in 1909, and about 200 cases in 1910.

Thus far this year but 23 cases have been reported to the department of health, distributed by counties as follows:

Butler county	1	Phillips county	1
Cowley county	1	Riley county	2
Graham county	1	Saline county	2
Greenwood county	1	Sedgwick county	1
Lincoln county	2	Shawnee county	1
McPherson county	2	Smith county	1
Marion county	1	Stanton county	1
Montgomery county	1	Washington county	2
Nemaha county	1		
Osborne county	1	Total	23

Of this number there were three deaths, a mortality of 13 per cent, as compared with a mortality of 29 per cent for 1909 and 24.6 per cent for 1910.

What is Rest.

EMINENT SPECIALISTS SHOW VALUE OF EXERCISE AND DANGERS OF FATIGUE IN TUBERCULOSIS.

That no consumptive can hope for a cure of his disease without following the most rigid routine with regard to rest is the conclusion of four interesting articles, in the *Journal of Outdoor Life* for June, by Professor Frederic S. Lee, of Columbia University, New York; Drs. Lawrason Brown and F. H. Heise, of the Adirondack Cottage Sanatorium, Trudeau, N. Y.; Dr. Joseph H. Pratt, of Boston, and Will M. Ross, of Stevens Point, Wis.

Professor Lee, writing on the subject "The Physiology of Exercise and Rest," shows by experiments on dissected frogs the way in which exercise tires the muscles and, in fact, all the organs of the body. He says:

"There is no known antidote to fatigue, unless it be rest, with all that rest implies. Sleep allows the reparative process of rest to be performed most quickly and completely. A moderate degree of fatigue, or even a considerable degree when not too often incurred, is not detrimental to a healthy body and is even to be advised. The healthy body is provided with great recuperative powers, and does not rapidly succumb to even excessive demands on its energy. But it should be allowed the proper condition for recuperation, and that condition is adequate rest. There is danger when the fatigue of one day's labor is not eliminated before the next day's work is begun. The effects may then be cumulative, the tissues may be in a continued state of depression, and the end may be disastrous."

Drs. Brown and Heise, in an article on "Properly Regulated Rest and Exercise in Pulmonary Tuberculosis," hold that the action of the poisonous germs of the disease on the body is very similar to that of overexercise. The poisonous irritation caused by the germs gives the organs and tissues of the body a double load to carry. They emphasize the importance of rest in the treatment of tuberculosis, but also insist that properly regulated exercise is very necessary. They state their conclusions thus:

"Exercise when properly regulated and systematically graded is an important factor in the treatment of pulmonary tuberculosis. Through it the patient is in many cases returned to home and family with lessened chances of future relapse. At the same time part of his earning capacity is restored and he is consequently financially less dependent upon others, relieving him of much worry, expense and hardship."

Dr. Pratt, who was founder of the first Church Tuberculosis Class in the United States, in the Emmanuel Church of Boston, claims that in the treatment of tuberculosis absolute rest, often in

bed, must be extended over a period of months, before the consumptive should take any exercise. He says: "Prolonged rest in bed out of doors yields better results than any other method of treating pulmonary tuberculosis. Patients will have a better appetite and take more food without discomfort and gain weight and strength faster than patients with active disease who are allowed to exercise. Complications are much less frequent. When used in the incipient stage recovery is more rapid and surer."

Mr. Ross, who is himself a cured consumptive, and a writer of considerable prominence, holds that unless resting becomes a business to the tuberculosis patient, he might as well give up his fight for health. He says: "The period of infection with tuberculosis is not a vacation. It is a twenty-four-hours-a-day job. True, it is a period of idleness, but one of intelligent, directed idleness. The day's work should consist of rest; rest should be the only business on hand. The light exercise, or hour of reading, should be considered as the reward of a good day's work, like the evening of slippered ease to the tired business man at the end of the day. This recreation, however, should be considered only as an incidental result of the patient's work, not the main object."

Paper-bag Cookery.

By PROF. E. H. S. BAILEY, Food Analyst, State Board of Health.

The inventions of man to make living easier seem to be more numerous as time goes on. Not only has the life of the workman been brightened by labor-saving machinery, but the field of woman's work has continually been invaded by the same kind of help. The sewing, knitting, breadmaking and dishwashing machines are all examples of what has been done in the past. There still remained the pots and pans that were used in cooking to haunt the waking hours of the busy housewife. Now the use of these has largely been done away with by the invention of Nicolas Soyer, a London chef, who actually uses paper bags for most of the cooking.

Who that has partaken of a "clambake," or eaten corn or potatoes roasted in their natural coverings under the coals, does not know that it is possible to cook food in this way, and moreover who does not know that the *quality* of the food is much improved over the ordinary methods of cooking. This, then, is the germ of the process. Of course an ordinary paper bag which has not been prepared for this purpose will not answer, as it contains impurities which would impart a disagreeable flavor to the food. Special

cooking bags are now on sale by many grocers and in the larger cities.

The bag to be used is greased on the inside, except when vegetables are to be cooked, when water is used. After the food has been put in, the mouth of the bag is folded over several times, and this as well as the corners is fastened with wire clips. The bag is then placed in the oven on a broiler or wire grate so that the heat can circulate around it, and nothing more is necessary until the food has been in the oven for the specified time, when it is slipped on a plate and removed. Of course it is understood that the oven has previously been heated to the ordinary baking temperature.

The chef mentioned above has carefully experimented, and presents a "time table," which may be applied to all varieties and quantities of food to be cooked. Seven pounds of fish, for instance, requires 50 minutes; three pounds of beef, 45 minutes; spring chicken, 25 minutes; potatoes, 30 minutes; peas, 25 minutes; a stew, 40 minutes, etc. Pastry, cakes, apple dumplings, puddings and even soups can be cooked in this way. The stew pan and the frying pan are at last abolished!

Of the twenty-one deaths from smallpox, during a recent epidemic in this state, not one had ever been successfully vaccinated.

The greatest triumphs in the history of medicine have been in the domain of preventive medicine, and more brilliant discoveries are yet to be made.

The Microbe's Serenade.

(Submitted by Peter the Hermit.)

At a recent dinner of the founders of the New Theater, in New York, George Ade delivered the following original verses in response to a hearty call:

A lovely microbe met by chance,
At a swagger bacteroidal dance,
A proud bacillian belle; and she
Was first of the animalculæ;
Of organism saccharine
She was the protoplasmic queen,
The microscopical pride and pet
Of the biological smartest set.
And so the infinitesimal swain
Evolved a pleading, low refrain:

“Oh, lovely metamorphic germ,
What futile scientific term
Can well describe your many charms?
Come to these embryonic arms,
Then hie away to my cellular home
And be my little diatom!”

His epithelium burned with love.
He swore by molecules above
She'd be his own gregarious mate
Or else he would disintegrate.
This amorous mite of a parasite
Pursued the germ both day and night,
And 'neath her window often played
This Darwin-Huxley serenade—
He'd warble to her every day
This rhizopodical roundelay:

“Oh, most primordial type of spore,
I never met your like before;
And though a microbe has no heart,
From you, sweet germ, I'll never part.
We'll sit beneath some fungus growth,
Till dissolution claims us both!”

With the Sages.

All thy virtue dictates, dare to do.—Mason.

Be fit for more than you are now doing.—Garfield.

What we have been makes us what we are.—George Eliot.

The greatest of faults is to be conscious of none.—Carlyle.

To be weak is often, in the end, to be wicked.—Holme Lee.

To live in hearts we leave behind is not to die.—Campbell.

Luxury in this world makes us forget another.—Bartholomew.

All earthly joys go less to the one joy of doing kindness.—Geo. Herbert.

If you have knowledge, let others light their candles at it.—T. Fuller.

All philosophy lies in two words—"sustain" and "abstain."—Epictetus.

No conquest is so severe as his who labors to subdue himself.—T. à Kempis.

He most lives who thinks most, feels the noblest, acts the best.—P. J. Bailey.

Trust that man in nothing who has not a conscience in everything.—Sterne.

Excellence is never granted to man but as the result of labor.—Sir J. Reynolds.

It is much easier not to begin a bad course than to stop when begun.—Tillotson.

Many give themselves more trouble to raise doubts than to scatter them.—Lessing.

Evil habits, when they once settle, are more easily broken than mended.—Quintilian.

The way to gain a good reputation is to endeavor to be what you desire to appear.—Socrates.

AUTUMN.

Oh, life is rife in the heart of the year,
When midsummer suns sail high;
And under the shadow of spike and spear,
In the depth of the daisy sky,
There's a life unknown to the careless glance;
And under the stillness and airy prance,
And slender, jointed things astir,
And gossamer wings in a sunny whirl—
And a world of work and dance.

Soft in its throbbing, the conscious green
Demurely answers the breeze;
While down in its tangle, in riotous sheen,
The hoppers are bending their knees;
And only a beetle or lumbering ant,
As he pushes a feathery spray aslant—
Or the sudden dip of a foraging bird,
With its vibrant trail of the clover stirred,
Discovers the secret haunt.

Ah, the grass world dies in the autumn days,
When, studded with sheaf and stack,
The fields lie browning in sullen haze,
And creak in the farmer's track.
Hushed is the tumult the daisies knew,
The hidden sport of the supple crew;
And lonely and dazed in the glare of the day
The stiff-kneed hoppers fail to play
In the stubble mocking the blue;
For all things feel that the time is drear
When life runs low, in the heart of the year.
—*Mary Mapes Dodge.*

BULLETIN

OF THE

Kansas State Board of Health.

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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DEACON, Registrar.

No. 11.

NOVEMBER, 1911.

VOL. VII

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Keep your feet warm!

Most "colds" are "catching"!

God bless the man who first invented soap!

The "beauty" fakes are reaping a rich harvest.

Is the steam whistle a menace to public health?

The unvaccinated still continue to have smallpox.

The crime that nature never forgives is indolence.—*Estey.*

The neglected "cold" is one of the season's greatest dangers.

Hygiene can prevent more crime than any law.—*Muensterberg.*

The clear eye, the pink skin and the elastic step are the visible signs of health.

Cold-storage, or preserved eggs, must be sold as such; the purchaser is entitled to just the article he asks for, and the properly stored March and April egg is entitled to the good name it should have.

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
Meade.....	0	0	2	1	0	0	0	0	0	0	0	0
Miami.....	0	0	1	1	1	0	1	0	0	0	0	0
Mitchell.....	1	1	8	0	2	0	0	0	0	0	0	0
Montgomery.....	1	2	10	0	8	0	4	0	0	0	0	0
* Morris.....												
* Morton.....												
Nemaha.....	0	0	3	0	0	0	0	0	0	0	0	0
Neosho.....	0	0	4	0	2	0	3	0	0	0	1	0
Ness.....	0	0	1	0	0	0	0	0	0	0	0	0
Norton.....	1	0	3	0	0	0	1	0	0	0	0	0
Osage.....	0	0	5	0	2	0	0	0	0	0	0	0
Osborne.....	1	1	5	0	0	0	0	0	0	0	0	0
Ottawa.....	0	0	4	0	1	0	2	0	0	0	3	0
Pawnee.....	1	0	5	0	0	0	0	0	0	0	0	0
Phillips.....	0	0	0	0	0	0	0	0	0	0	0	0
Pottawatomie.....	0	0	3	0	0	0	5	0	0	0	0	0
Pratt.....	1	1	18	2	0	0	4	0	0	0	0	0
Rawlins.....	0	0	0	0	0	0	0	0	0	0	0	0
Reno.....	0	0	2	0	0	0	0	0	0	0	0	0
Republic.....	0	0	3	0	0	0	4	0	0	0	0	0
Rice.....	1	0	3	0	2	1	0	0	0	0	0	0
Riley.....	2	1	7	0	0	0	9	0	4	0	0	0
Rooks.....	0	0	0	0	0	0	0	0	0	0	0	0
Rush.....	1	1	0	0	3	0	5	0	0	0	0	0
Russell.....	0	0	2	0	0	0	0	0	0	0	0	0
Saline.....	0	0	1	0	0	0	1	0	0	0	0	0
Scott.....	0	0	0	0	0	0	0	0	0	0	0	0
Sedgwick.....	0	0	3	0	2	0	0	0	0	0	0	0
Seward.....	0	0	2	1	0	0	1	0	0	0	0	0
Shawnee.....	0	0	0	0	0	0	0	0	0	0	0	0
Sheridan.....	0	0	0	0	0	0	0	0	0	0	0	0
Sherman.....	0	0	0	0	0	0	0	0	0	0	0	0
* Smith.....												
* Stafford.....												
Stanton.....	0	0	0	0	0	0	0	0	0	0	0	0
Stevens.....	0	0	1	0	0	0	0	0	0	0	0	0
* Sumner.....												
* Thomas.....												
Trego.....	0	0	0	0	0	0	2	0	0	0	0	0
Wabaunsee.....	1	1	0	0	0	0	0	0	0	0	0	0
* Wallace.....												
Washington.....	1	0	2	0	0	0	0	0	0	0	0	0
Wichita.....												
Wilson.....	0	0	9	1	7	2	14	0	0	0	0	0
Woodson.....	0	0	7	0	0	0	0	0	0	0	0	0
* Wyandotte.....												
Cities:												
Fort Scott.....	0	0	2	1	0	0	0	0	1	0	0	0
Atchison.....	3	1	2	0	0	0	0	0	0	0	0	0
Coffeyville.....	2	1	4	0	2	0	1	0	0	0	0	0
Kansas City.....	6	0	16	0	18	0	3	0	2	0	0	0
Leavenworth.....	3	0	19	0	0	0	0	0	0	0	0	0
Parsons.....	0	0	0	0	1	0	3	0	0	0	0	0
Pittsburg.....	0	0	1	1	19	0	0	0	0	0	0	0
Topeka.....	0	0	1	10	1	0	3	0	6	1	0	0
* Wichita.....												
Hutchinson.....	0	0	14	0	0	0	5	0	0	0	0	0

* State Institutions.

* No report.

Among the many thousands of samples of vaccine virus examined at the Hygiene Laboratory of the Public Health and Marine Hospital Service, not a single instance of contamination by tetanus spores was found.

DEATHS AND BIRTHS IN KANSAS, Month of September, 1911.

DEATHS.

Stillbirths not included.			
Typhoid fever.....	68	Diseases of liver and adnexa.....	16
Smallpox.....	6	Peritonitis.....	21
Measles.....	0	Other diseases digestive system.....	40
Scarlet fever.....	2	Acutenephritis.....	18
Whooping cough.....	8	Bright's disease.....	28
Diphtheria.....	8	Other diseases genito-urinary system.....	17
Dysentery.....	12	The puerperal state.....	12
Tuberculosis, all forms.....	58	Diseases of the skin, etc.....	2
Cancer, all forms.....	71	Diseases of the bones, etc.....	1
Rheumatism, all forms.....	7	Malformations.....	2
Diabetes.....	19	Diseases of early infancy.....	106
Other general diseases.....	20	Old age.....	46
Meningitis.....	11	Suicides.....	17
Cerebral hemorrhage.....	50	Accidents.....	74
Paralysis.....	28	Homicides.....	1
Other diseases nervous system.....	27	Ill-defined diseases.....	20
Organic heart disease.....	68	Total deaths.....	1,078
Other diseases circulatory system.....	21	BIRTHS.	
Broncho-pneumonia.....	7	Males.....	1,172
Pneumonia.....	20	Females.....	1,023
Other diseases respiratory system.....	18	White.....	2,162
Diarrhea and enteritis (under 2 years).....	85	Colored.....	83
Diarrhea and enteritis (2 years and over),	23	Total births, 3,195.	
Appendicitis.....	14	Stillbirths, 51.	

AGES AT DATE OF DEATH.

Ages.	No.		
-1.....	244	SEX.	
1-2.....	50	Males.....	625
3-5.....	14	Females.....	447
6-10.....	15	COLOR.	
11-15.....	19	White.....	1,006
16-20.....	40	Indian.....	2
21-25.....	45	Black.....	64
26-30.....	55	NATIONALITY.	
31-35.....	42	Native.....	911
36-40.....	42	Foreign.....	181
41-45.....	42	Unknown.....	30
46-50.....	34	SOCIAL CONDITION.	
51-60.....	94	Single.....	459
61-70.....	131	Married.....	425
71-80.....	152	Widowed.....	168
81-90.....	61	Divorced.....	10
91-100.....	7	Unknown.....	15
100-+.....	1		
Unknown.....	4		
Total.....	1,078		

Fresh, pure air in home, school, and work places means a higher
body resistance to disease.

DRUG ANALYSES No. XXXIX.

L. E. SAYRE, Director; L. D. HAVENHILL, Chief; G. H. WATSON, Analyst;
C. M. STERLING, Microscopist.

This, the thirty-ninth report of the Drug Laboratory, is, in some respects, interesting, especially that portion of it which relates to certain nostrums that have been sent to the laboratory for examination.

Fruitola, of the Pinus Medicine Company, Los Angeles, Calif., No. 5226, which shows in our analysis to consist of olive oil as one of the remedial agents, for the purpose of removing gallstones, and, to ultimately cure all stomach trouble, was found, after our analysis, to have been commented upon by the laboratory of the American medical association, and its report was published in the Journal of that association under the date of March 14, 1908.

For the benefit of many who wish information in regard to this remedy, we quote in full what is said of it:

"FRUITOLA, A FAKE REMEDY FOR GALLSTONES.

"TO THE EDITOR.—A neighboring practitioner has been giving treatment for gallstones, his patients paying him \$50 if they pass any stones. I think the remedy he uses is sold under the name of 'Fruitola.' The patients are said to pass hundreds of gallstones after using it. Have you any account of the stuff? I think the concretions, which pass without pain, are soft and float when fresh. I believe that olive oil is the bulk of the remedy.

A. W. Y. CONARROE.

"ANSWER.—Fruitola is a 'patent medicine' which is alleged to have wonderful power of relieving appendicitis or any intestinal inflammation without an operation. It is also said to be a system cleanser, to remove gallstones and to cure all stomach trouble. Dr. E. E. Flagg, of Mooreland, Okla., writes us that he has obtained identically the same results with large doses (2 ounces) of olive oil.

"When olive oil was suggested for the treatment of gallstone colic, it was noticed repeatedly that after its administration the patient passed a considerable number of small lumps which were supposed to be gallstones. Chemical examination of these concretions showed, however, that they mainly consisted of soap which had been produced by the digestion of the oil. This observation has since been made use of by nostrum manufacturers to convince physicians and their patients of the efficiency of their preparations in securing the expulsion of gallstones. A simple examination will usually show the true nature of these bodies, since they disintegrate readily when stirred in water. It is probable that they consist of fecal matter mixed with the mass of soap.

"The value of olive oil in painful affections of the gastro-intes-

tinal tract is well established, and there is much clinical evidence to its soothing action in cases of gallstones, but the physician should not be misled into supposing that he has secured the elimination of a large number of gallstones because the patient passes a large number of lumps of soap, and he should be equally cautious in admitting the claims of the nostrum manufacturers that their remedies secure the passage of gallstones unless he has the opportunity to examine and test the stones himself."

"Wat-i-no," made by the Kester Chemical Company of Atchison, Kan., seems to be a preparation that has many questionable features, not least among which is the literature accompanying it. This literature, in even a scientific article, or in a publication such as this BULLETIN, cannot be discussed without hesitation. Undoubtedly the dealers in this preparation, when they fully realize the questionable features of the literature referred to, will seriously consider the problem of handling the article.

Coffee. Retail dealers in coffee should be cautioned that they obtain from the manufacturers or wholesale dealers a guaranty that the material they are distributing as coffee is genuine. If genuine, they will respond to the ordinary United States standards and will answer to the microscopical tests which are characteristic of the coffee bean. Sample No. 5585 is reported from this laboratory as adulterated and misbranded.

Official Preparations. We reiterate what has been stated in previous BULLETINS, that in some cases where official preparations are reported and no decision is made as to whether the substances are passed or not passed, in all such cases it is to be understood that the article in question is passed provisionally, pending further investigations now in progress, on preparations which have no specific standard other than the formula which is laid down in the United States Pharmacopœia or in the National Formulary. The latter work, it is well known, gives no standard except that of the standard preparation itself. If a preparation purporting to be a National Formulary preparation does not correspond in physical and chemical characteristics to the article made strictly by the National Formulary formula, this is then considered sufficient ground for questioning the suspected preparation, according to the ruling of the committee on standards of the Kansas State Board of Health.

Pepsin Preparations. No. 5230, "Elixir of Pepsin Compound," which shows a negative test so far as the presence of pepsin is concerned, is another illustration of how pepsin preparations de-

teriorate. It may be that when this elixir was freshly made it had peptic power, but when reaching this laboratory was found to be practically devoid of digestive properties.

Erratum. On page 184 of the last report, under the paragraph which refers to "Haynox," there is the following statement: "But manufacturers of such preparations, when they distribute these over the state of Kansas, should read carefully the rules and regulations of the Board of Health of the state of Kansas, as any *statement* as to the properties of the so-called remedial agent would be considered as an act of misbranding." The word "statement" should read "misstatement." It would then read "any manufacturers of such preparations, when they distribute them over the state of Kansas, should read carefully the rules and regulations of the Board of Health of the state of Kansas, as any *misstatement* as to the properties of the so-called remedial agent would be considered as an act of misbranding."

SPIRIT OF CAMPHOR.*

Lab. No.	Insp. No.	NAME.	City.	Gms. of camphor in 100 cc.
5198	9060	Dr. Jordon Drug Co.	Wichita	9.48
5200	9062	Makin Eye Drug Co.	Wichita	9.6
5201	9063	Higginson Drug Co.	Wichita	8.8
5202	9064	Archie McVicar.	Wichita	11.06
5208	9072	G. T. Riley	Wichita	7 57
5209	9071	Means Bros.	Wichita	10 38
5210	9072	Shelly Drug Co.	Wichita	9 52

* Spirit of camphor should contain 10 gms. of camphor in 100 cc.

FOWLER'S SOLUTION.*

Lab. No.	Insp. No.	NAME.	City.	Per cent of arsenous acid as compared with standard.
5229	9089	A. & A. Drug Co.	Great Bend ..	93 2
5232	9092	E. G. Wickwire.	Larned	95 0
5241	9101	City Drug Store	Garden City..	95.0

* Fowler's solution should contain 1 gm. of arsenic trioxide in 100 gms. of the solution.

BEESWAX.*

Lab. No.	Insp. No.	NAME.	City.	Sp. gv.	Sap. val.	M. P.
4808	8828	McCall Drug Co.	Palmer.	0.968	92.1	63 0°
4835	8865	D. Hogaboom.	Pittsburg ..	.963	89 2	63 5°
4890	8916	M. S. Bacon.	Yates Center,	9675	102 1	63 5°
4909	8853	Fess Bros.	Parsons .....	.961	100 5	63 0°

* Yellow wax should have a sp. gv. of .961-.960 and a melting point of 62-64°. Should have a saponification value of 90-96.

ESSENCE OF PEPSIN.*

Insp. No.	Lab. No.	NAME.	City.	Acidity.	Undigested albumin.
5228	9088	Hooper Drug Co.....	Great Bend...	2.75	9 cc.
5248	9107	Palace Drug Store.....	Bucklin	2.6	8 cc.
5249	9108	Dr. W. W. Pritchard.....	.....	4.5	1 cc.
5256	9115	N. H. Kilmer	Kingman.....	2 7	12 cc.

*An essence of pepsin made in the laboratory and assayed by the official method showed but 1 cc. of undigested albumin. Dilute (HCl) .2 per cent showed 28 cc. of undigested albumin.

ELIXIR OF LACTATED PEPSIN.*

Lab. No.	Insp. No.	NAME.	City.	Acidity.	Cc. of undigested albumin.
5231	9091	A. & A. Drug Co.....	Larned.....	3.3	1 cc.
5236	9096	Mosher, Goddard & Co.....	Kinsley	5	2 cc.
5238	9098	Rath & Brainbridge.....	Dodge City...	2.9	1 cc.
5240	9100	J. G. Thew & Co.....	Garden City...	3.	1.5 cc.
5245	9104	Hubbard's Drug Store.....	Liberal.....	1.6	25 cc.
5247	9106	Cole & Robb.....	Fowler.....	3	1.5 cc.
5255	9114	J. W. Cookson & Co.....	Kingman.....	2.8	1 cc.

* With one exception, No. 5245, no elixirs of lactated pepsin were found to be close to standard.

Insp. No. 8963, Lab. No. 4962. "Ammonia Water." Wichita Drug Company, Wichita. Sample had specific gravity of 0.974 and contained 5.5 per cent of ammonia. Exceeded limit of readily oxidizable and contained pyridine products. Adulterated.

Lab. No. 5047a, Insp. No. 2913. "Ayer's Glycerin." John Ressenger, Kansas City. Sample had specific gravity of 1.248 and gave negative test for sugar, chlorides, oxalates, calcium, sulphates, acrolien and heavy metals. Passed.

Lab. No. 5172, Insp. No. 9036. "Tr. of Arnica." W. K. Smith, Newton. Contained 3.26 gms. of extractive in 100 cc., and 48.5 of alcohol. Gave negative tests for methyl alcohol.

Lab. No. 5151, Insp. No. 9022. "Tr. of Gentian Compound." James White, Topeka. Weight of residue from 100 cc., 4.58. Per cent of alcohol, 47.7.

Lab. No. 5153, Insp. No. 9024. "Tr. of Rhubarb." A. T. Gibler, Topeka. Contained 13.49 grammes of extractive in 100 cc., and 44 per cent of alcohol.

Lab. No. 5181, Insp. No. 9045. "Tr. of Arnica." C. W. Engborg. Contained 2.54 grammes of extractive in 100 cc., and 45.5 per cent of alcohol. Gave negative tests for methyl alcohol.

Lab. No. 5182, Insp. No. 9046. "Soap Liniment." Palace

Drug Store, McPherson. Contained 5.84 grammes of soap and 4.28 grammes of camphor in 100 cc. Specific gravity of sample 0.8823.

Lab. No. 5185, Insp. No. 9049. "Tr. of Digitalis." Cooke Pharmacy, McPherson. Contained 3.75 grammes of extractive in 100 cc., and 56.65 per cent of alcohol.

Lab. No. 5187, Insp. No. 9051. "Tr. of Arnica." A. & A. Drug Company, Larned. Contained 2.93 grammes of extractive in 100 cc., and 45.3 of alcohol. Gave negative tests for methyl alcohol.

Lab. No. 5189, Insp. No. 9053. "Chloroform Liniment." Lyons Drug Company, Lyons. Contained 3.91 grammes of soap in 100 cc., and 2.81 grammes of camphor. Specific gravity of sample, 1.057.

Lab. No. 5199, Insp. No. 9061. "Laudanum." Wm. M. Swengell, Wichita. Contained 1.20 grammes of morphine in 100 cc. Passed.

Lab. No. 5205, Insp. No. 9067. "Tr. of Gelsemium." Harris & Conly, Wichita. Contained 0.871 grammes of extractive in 100 cc., and 63 per cent of alcohol.

Lab. No. 5211, Insp. No. 9073. Labeled "Bismuth Sub-Nitrate," not being sold. Shelley Drug Company, Wichita. Sample is not bismuth sub-nitrate, but a silicate of aluminum, flavored with oil of peppermint. This sample was sent to the laboratory asking for a report of its constituents.

Laboratory No. 5216, Insp. No. 9079. "Laudanum." Lease & Gibbons, Wichita. Contained 1.2 grammes of morphine in 100 cc. Passed.

Lab. No. 5219, Insp. No. 9082. "Tr. of Iodine." Oxley Drug Company, Wichita. Sample contained 5.92 grammes of iodine in 100 cc. of the tincture, and no potassium iodide. Below standard.

Lab. No. 5221, Insp. No. 9084. "Essence of Peppermint." A. B. Webber, Wichita. Contained 8.56 cc. of oil in 100 cc. of the spirit. Below standard.

Lab. No. 5226, Insp. No. —. "Fruitola." Pinus Medicine Company, Los Angeles, Calif. Fruitola consists of one bottle of olive oil flavored with a small amount of volatile oil, apparently oil of anise, and two seidlitz powders. Fruitola is declared by the manufacturer to remove gallstones and positively cure all stomach trouble.

Lab. No. 4227, Insp. No. —. "Traxo." Pinus Medicine Company, Los Angeles, Calif. Traxo was found to consist mainly of traxacoum and cascara. Preparation contained 20 per cent of alco-

hol, a small amount of chloroform and soluble alkaloid. Traxo is declared by the manufacturer to be a tonic and regulator for the liver, kidneys and spleen.

Lab. No. 5230, Insp. No. 9090. "Elixir of Pepsin Compound." C. E. Holmes, Great Bend. Required 5.9 cc. of N/10 NaOH to neutralize 5 cc. of the preparation. When assayed by the official method, 25 cc. of undigested albumen remained. Adulterated.

Lab. No. 5233, Insp. No. 9093. "Ammonia Water." Barber's Cash Drug Store, Larned. Sample had specific gravity of 0.976. Contained 5.95 per cent of ammonia and a large amount of sediment. Pyridine bases were present and sample exceeded limit of readable oxidizable substances. Sulphates were detected. Below standard. Adulterated.

Lab. No. 5234, Insp. No. 9094. "Essence of Peppermint, U. S. P." Kinsley Mercantile Company, Kinsley. Contained 8.9 cc. of oil in 100 cc. of the spirit.

Lab. 5243, Insp. No. —. "Linseed Oil." August Kuhlmann, Hanover. Sample had specific gravity of 0.921, flash point, 110° C. Fire test, 350° C. Sap. No. 189.4. Sample contained manganese dryer and a small amount of high-boiling-point mineral oil.

Lab. No. 5244, Insp. No. —. "Tablet." E. D. Replogle, Cottonwood Falls. Sample had starch base and contained an iron salt. Tablets were evidently similar to Blaud's pills.

Lab. No. 5246, Insp. No. 9105. "Cinnamon Water." M. & M. Drug Company, Meade. Preparation did not have odor or taste of cinnamon. Adulterated.

Lab. No. 5250, Insp. No. 9109. "Acetic Acid." Lottridge & Lottridge, Pratt. Sample contained 36.3 per cent acid. Specific gravity, 1.045. Passed.

Lab. No. 5253, Insp. No. 9112. "Acetic Acid, No. 8." Frank R. Millne, Pratt. Contained 28.2 per cent acetic acid. Contained chlorides and exceeds limit of empyreumatic substances. Below standard.

Lab. No. 5251, Insp. No. 9110. "Lime Water Tablets." Pratt Drug Store, Pratt. Sharp & Dohme, jobber. Solution made from sample was 94.7 per cent of United States Pharmacopœia standard.

Lab. No. 5254, Insp. No. 9113. "Cinnamon Water." Potter Mercantile Co., Turon. Sample was slightly over 50 per cent of United States Pharmacopœia standard. Below standard.

Lab. No. 5257, Insp. No. 17x. "Graham Flour." B. E. Gibson, Blue Rapids. Examination shows whole wheat meal, which is the only standard set for graham flour. If there are any corn or oat

products present they are in exceedingly small quantities and they must be there by accident. The flour is coarse, about one-sixth being too coarse to pass through a No. 20 sieve. A smaller sample accompanying this (not an official sample), was found to be adulterated, containing oats, corn and chaff.

Lab. No. 5258, Insp. No. 19x. "Silver Top." Liquid Food Bottling Co., Kansas City, Mo. Sent by Dr. Paul Christmann, Parsons, Kan. Examined for alcohol. No alcohol present.

Lab. No. 5259, Insp. No. 20x. "Champagne Velvet Beer." Sent in by city health officer, Parsons. Found to contain about 4.85 per cent alcohol. Sample sent (not by inspector) to board of health, then to drug laboratory.

Lab. No. 5263, Insp. No. 5058. "Wat-I-No." Koester Chemical Co., manufacturers, Atchison; McPike Co., Kansas City, Mo., distributors. Suppositories containing cacao butter, methyl salicylate and boric acid. Each suppository contains about 0.530 grammes of boric acid. These suppositories were put up in capsules, the contents of each capsule weighing about 2.49 grammes.

Lab. No. 5262, Insp. No. 5585. "Princess Roasted Coffee." Blended, roasted and packed by the Peerless Coffee Mills, Wichita and Hutchinson. Sample was found to be adulterated and misbranded.

FOOD ANALYSES No. XXXVI.

By Prof. E. H. S. BAILEY, Ph. D., Chemist for the State Board of Health, and Assistant Professor JACKSON, M. S., Food Analyst.

ILLEGAL PICKLES.

Despite the long time during which the inspectors have warned retailers that pickles containing alum or other salts of aluminum were illegal in Kansas, this fact does not seem to be universally understood as yet.

Certain manufacturers seem not to wish to conform with the law in Kansas in this respect, as they persistently ship pickles containing alum, or salts of aluminum, into the state. The following retailers, therefore, have to be reported as handling illegal pickles:

No. 9512. Label, "Forest City Brand Sour Gherkins. Prepared with a small amount of alum." Distributor, Allen Bros. Co., Omaha, Neb. Retailer, M. J. Goff, Narka, Kan. Alum present. Illegal.

No. 9513. Label, "Forest City Brand of Sour Gherkins." Distributor, Allen Bros. Co., Omaha, Neb. Retailer, M. J. Goff, Narka, Kan. Alum present. Illegal.

No. 9555. Label, "Forest City Brand Sour Gherkins. Prepared with a small amount of alum." Distributor, Allen Bros. Co., Omaha, Neb. Retailer, A. George, Stuttgart, Kan. Alum present. Illegal.

No. 9559. Label, "Forest City Brand Sweet Gherkins. Contains one-tenth of 1 per cent of benzoate of soda." Distributor, Allen Bros. Co., Omaha, Neb. Retailer, Davis Bros., Otego, Kan. Alum present. Illegal.

No. 9579. Label, "Forest City Brand Sour Gherkins. Prepared with a small amount of alum." Distributor, Allen Bros. Co., Omaha, Neb. Retailer, J. O. Cope, Oronoque, Kan. Alum present. Illegal.

No. 9580. Label, "Forest City Brand Sour Gherkins." Distributor, Allen Bros. Co., Omaha, Neb. Retailer, J. O. Cope, Oronoque, Kan. Alum present. Illegal.

No. 9586. Label, "Forest City Brand Sour Gherkins. Prepared with a small amount of alum." Distributor, Allen Bros. Co., Omaha, Neb. Retailer, W. A. Helvey & Son, Goodland, Kan. Alum present. Illegal.

No. 9599. Label, "Forest City Brand Sour Gherkins. Prepared with a small amount of alum." Distributor, Allen Bros. Co., Omaha, Neb. Retailer, Geo. H. Dunsmoor, Long Island, Kan. Alum present. Illegal.

No. 9590. Label, "Delight Brand Pickles. Prepared with alum." Manufacturer, M. B. Shelley Mfg. Co., St. Louis, Mo. Retailer, J. C. Gernhart, Ruleton, Kan. Alum present. Illegal.

No. 9603. Substance, "Pickles." Manufacturer, Haarmann Vinegar and Pickle Co., Hastings, Neb. Retailer, W. D. Bovey, Woodruff, Kan. Alum present. Illegal.

VINEGAR.

No.	Kind of vinegar.	Acid, per cent.	Solids, per cent.	Total ash, per cent.	Alkalinity of soluble ash.	Remarks.
7948	Cider...	3.88	1.95	0.40	43.0	Illegal.
9562	Cider...	2.96	.....	.....	.....	Illegal.
9566	Cider...	3.50	1.27	0.24	2.8	Illegal. Grossly adulterated.
9568	Cider...	4.15	1.87	0.32	14.0	Illegal. Grossly adulterated.
9570	Cider...	4.60	1.61	0.31	36.4	Suspicious.
9577	Cider...	1.70	.....	.....	.....	Illegal.
9578	Cider...	4.53	1.23	0.28	20.8	Illegal. Badly adulterated.
9591	Cider...	4.12	1.74	0.23	25.2	Illegal. Adultera'd.
9592	Cider...	1.88	.....	.....	.....	Illegal.
9600	Cider...	4.22	1.81	0.27	30.4	Illegal. Adultera'd.

PICKLES PASSED.

No. 9560. Tested for alum and preservatives. None found. Passed.

No. 9561. Tested for alum and preservatives. None found. Passed.

No. 9588. Tested for alum. None found. Passed.

ADDITIONAL DATA TO ILLEGAL VINEGARS LISTED ABOVE.

(See Table of Vinegars.)

No. 7948. Substance, "Vinegar." Jobber, A. M. Blackmer, Scott City, Kan. Retailer, L. & M. Mercantile Co., Scott City, Kan. Illegal.

No. 9562. Substance, "Vinegar." Manufacturer, Charles Alexander, Burr Oak, Kan. Retailer, E. B. Jackson, Burr Oak, Kan. Illegal.

No. 9566. Substance, "Vinegar." Manufactured for H. D. Lee Mercantile Co., Salina, Kan. Retailer, H. M. Wilson, Colby, Kan. Grossly adulterated. Illegal.

No. 9568. Substance, "Cider Vinegar." Brand, "Silver Leaf Pure Cider Vinegar." Manufacturer, Otto Kuehne Preserving Co., Topeka, Kan. Retailer, Parrott Milling Co., Colby, Kan. Illegal.

No. 9570. Substance, "Cider Vinegar." Manufactured for H. D. Lee Mercantile Co., Salina, Kan. Retailer, L. C. Voisin, Colby, Kan. This vinegar is reported as suspicious, because it is just on the line in most respects, but falls below in one test, in a way which makes it seem impossible that it could be a pure cider vinegar.

No. 9577. Substance, "Cider Vinegar." Manufacturer, Star Bottling and Vinegar Works, Norton, Kan. Retailer, Norton Mercantile Co., Norton, Kan. Illegal.

No. 9578. Substance, "Cider Vinegar." Manufacturer, Haarmann Vinegar and Pickle Co., Omaha, Neb. Retailer, Norton Mercantile Co., Norton, Kan. Illegal.

No. 9591. Substance, "Cider Vinegar." Manufactured for Allen Bros. Co., Omaha, Neb. Retailer, W. Alfred Helvey & Son, Goodland, Kan. Illegal.

No. 9592. Substance, "Cider Vinegar." Manufacturer, Star Manufacturing Co., Norton, Kan. Retailer, W. R. Riblett, Gem, Kan. Illegal.

No. 9600. Substance, "Cider Vinegar." Manufacturer, Granger Bros. Co., Lincoln, Neb. Retailer, Chas. Bethke, Woodruff, Kan. This sample is reported illegal on account of falling below

the standard of ten milligrams of soluble P_2O_5 , in each 100 cubic centimeters. It is low in other analytical constants. Illegal.

The following vinegars, all cider vinegars, are passed: Inspector's Nos. 6644, 6645, 6646, 6650, 6651, 7950, 9567.

FLAVORING EXTRACTS. VANILLA.

No. 7965. Label, "Vanilla Flavoring. This bottle contains one-third per cent alcohol, vanillin, coumarin, caramel and water." Manufacturer, Miss Lottie Wallow, Salina, Kan. Retailer, Miss Lottie Wallow, Salina, Kan. Caramel, present; alcohol, 22 per cent; coumarin, present. Illegal.

No. 9500. Label, "Two Ounces Arion Standard Vanilla Flavor. Alcohol, 12 per cent. Guaranteed by Scientific Medicine Co. Serial No. 6987." Manufacturer, Scientific Medicine Co. Retailer, H. F. Dunke, Ludell, Kan. Coumarin, present; basic Winton lead No. 0.012. Although the word artificial is stamped on the box it is very indistinct and the label is entirely false and misleading. Illegal.

No. 9501. Label, "Vanilla Extract." Manufacturer, Star Manufacturing Co., Norton, Kan. Retailer, L. Winter, St. Francis, Kan. Caramel, present; coumarin, present; basic Winton lead No. 0 89. Illegal.

The following vanilla extracts are passed: Inspector's Nos. 9030A, 9076, 9551, 9553.

LEMON.

No. 7958. Label, "Wedding Breakfast Flavoring Extract Lemon. Guaranteed under the Food and Drugs Act of June 30, 1906." Label on carton, "The extract contained herein is guaranteed perfectly pure and of the highest degree of strength possible to attain. Care should be taken not to use too much." Manufacturer, Eagle Laboratories, St. Louis and Denver. Retailer, Henry Krug, Hoisington, Kan. Lemon oil, 7.4 per cent. This sample would have passed if it had not been for the highly exaggerated and misleading statement that the extract was of the highest degree of strength possible to attain. This statement is very far from the truth. Illegal.

No. 9499. Label, "2 oz., Arion Standard Lemon Flavor. Alcohol 35 per cent. Guaranteed under the Food and Drugs Act of June 30, 1906. Serial 6987." Manufactured for Donald & Porter Co., Grand Island, Neb. Retailer, H. F. Dunker, Ludell, Kan. Lemon oil, not over 0.3 per cent. Illegal.

No. 9552. Label, "Pure Lemon Extract. Full measure 4 oz.

N. Y. Store." Manufacturer, The Capital City Bottling Works, Topeka, Kan. Retailer, New York Store Mercantile Co., Beloit, Kan. Lemon oil, not over 0.5 per cent. Illegal.

No. 9584. Label, "Star Brand Lemon Extract. Not over 50 per cent alcohol." Manufacturer, Star Manufacturing Co., Norton, Kan. Retailer, J. G. Rouse & Son, Selden, Kan. Lemon oil, not over 0.4 per cent. Colored with coal tar dye to look like a lemon extract. Illegal.

The following lemon extracts contain from 5 to 8.5 per cent oil of lemon, and are passed: Inspector's Nos. 6633, 7941, 7959, 7961.

STRAWBERRY.

No. 5059. Substance, "Strawberry Extract." One of the worst cases of misrepresentation is the following: A gentleman sent to the food laboratory a sample of a red solution which had been sold to him for strawberry extract. Upon examination, it proved to be nothing but a solution of a red dye and showed not the slightest indication of being even an imitation of strawberry extract.

EVAPORATED PEACHES.

The following samples of dried fruit were artificially bleached with sulphur dioxide:

No. 7779. Substance, "Evaporated Peaches." Manufacturer, Rosenberg Bros. & Co., San Francisco, Calif. Retailer, Ervin & Crippen, Newton, Kan. Illegal.

No. 7980. Substance, "Evaporated Peaches." Manufacturer, Ridenour-Baker Grocery Co., Kansas City, Mo. Retailer, Becker Bros., Newton, Kan. Illegal.

No. 7949. Substance, "Evaporated Apricots." Manufacturer, J. K. Armsby Co., Los Angeles, Calif. Retailer, Roark & Son, Scott City, Kan. Illegal.

No. 7954. Substance, "Evaporated Peaches." Manufacturer, E. T. Reynolds & Son, Chico, Calif. Retailer, E. J. Evelegh & Sons, Boyd, Kan. Illegal.

No. 7955. Substance, "Evaporated Peaches." Jobber, Watson, Durand & Kasper. Retailer, Kasper Dahinten, Hoisington, Kan. Illegal.

BAKING POWDER.

The following baking powders contained more than the ten per cent of available carbon dioxide or leavening gas required in Kansas, and were properly labeled as to their ingredients and so passed: Inspector's Nos. 9344, 9370, 9370-A.

BEVERAGES.

The following were examined for alcohol, or alcohol and preservatives, and they were free from both: Inspector's Nos. 7890, 9352A, 9352C.

No. 9352B. Label, "Bavarian Malt Extract." Manufacturer, Heim Brewery, Kansas City, Mo. Contained 4.65 per cent alcohol, and therefore is an alcoholic liquor. It was reported to the proper county attorney.

No. 6631. Substance, "Imitation Blackberry Cider." Manufacturer, Frisco Cider Co., St. Louis, Mo. Retailer, W. A. Van Horne, Larned, Kan. Contains metallic salts, namely, salts of zinc. Illegal.

No. 7783. Label, "Artificial Cider." Manufacturer, Great Bend Bottling Works, Great Bend, Kan. Retailer, Drake Bros., Ness City, Kan. There is no such product as artificial apple cider, it is an imitation and should be so labeled. Misbranded.

No. 7785. Substance, "Apple Cider." Passed.

RICE.

No. 7801. Uncoated. Passed.

No. 7944. Label, "Maple Leaf Brand Fancy Rice." Packed by Riley-Wilson Grocery Co., Kansas City, Mo. Retailer, The Pearson Bros., Osawatomie, Kan. Coated with glucose and talc. Illegal.

CHEESE.

No. 7946. Passed.

No. 7947. Passed.

WORMY CANDY.

No. 9550. Substance, "Candy." Label (first box), "Candy. Selected pieces. (Enreka Mix) Brand." Label (second box) "Candy. Pieces just as they came from case." Manufacturer, Douglas Candy Co., St. Joseph, Mo. Retailer, Ned Stephenson & Co., Alton, Kan. Of the selected pieces, ten out of eighteen were visibly wormy. Of the unselected pieces, four out of fifty-two were visibly wormy and the rest were of a nature that worms do not seem to attack.

EVAPORATED MILK.

No. 7952. Label, "Swan Brand Sheboygan County Evaporated Milk." Manufacturer, Oostburg Evaporated Milk Co., Oostburg, Wis. Retailer, Starrett & Reynolds, McCracken, Kan. Low in milk solids. Illegal.

MISCELLANEOUS.

No. 2870. Substance, "Maple Syrup." Passed.

No. 9075. Substance, "Olive Oil." Passed.

FOOD ANALYSES No. XXXVII.

By Prof. J. T. WILLARD, Analyst for the Board, and C. A. A. UTT, Assistant.

MANHATTAN, KAN., November 27, 1911.

We present in the following pages the results obtained upon samples of certain foods not hitherto reported.

FLOUR.

Insp. No. 9495, Serial No. 4524. Flour, Meybest brand, manufactured by the Superior Milling Co., Superior, Neb., and sold by Craft & Baxter, Republic City, Kan. Gives reaction for nitrites, showing that it is bleached. Illegal.

Insp. No. 9496, Serial No. 4525. Flour, White Seal brand, manufactured by Jensen & Sons, Nelson, Neb., and sold by W. Hahn, Republic City, Kan. Bleached. Illegal.

Insp. No. 9497, Serial No. 4526. Flour, Choice Family Model brand, manufactured by Hardy Roller Mills, Hardy, Neb., and sold by W. Hahn, Republic City, Kan. Bleached. Illegal.

Insp. No. 9564, Serial No. 4821. Flour, Gold Medal brand, manufactured by the Plainville Mill and Elevator Co., Plainville, and sold by R. W. Gilpin, Codell. Moderately bleached. Illegal.

Insp. No. 9511, Serial No. 4722. Flour, Thorough-Bread brand, manufactured by Bozarth Bros. and Carter, Hebron, Neb., and sold by W. W. Love & Co., Mahaska, Kan. Bleached. Illegal.

These flours were not labeled to indicate bleaching.

ICE CREAM.

Insp. No.	Serial No.	SELLER.	Place.	Per cent fat.	Class.
6534	4477	Higginson Drug Co.	Wichita	16.8	Passed.
6536	4479	Wolf Bakery	"	14.4	"
6537	4480	Baltimore Dairy Lunch	"	15.6	"
6538	4481	Britell Drug Co.	"	15.5	"
9492	4491	Arbuthnot Drug Co.	Belleville.	12.0	Illegal.
9494	4493	Haning & Reed	"	8.0	"
6551	4588	C. E. Baxter	Kansas City..	9.6	"
6557	4591	DeCoursey Ice Cream Co.	"	10.0	"
6621	4646	E. Baughman	"	6.3	"
7894	4647	Continental Creamery Co.	Topeka.	14.0	Passed.
6622	4672	R. P. Roberts.	McCune.	13.0	Illegal.

CREAM.

6552	4589	C. E. Baxter	Kansas City..	25.0	Passed.
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BUTTER.

Insp. No.....	Serial No.....	SELLER.	Weights.			Percentage.				Class.
			Maxi- mum.	Mini- mum.	Aver- age.	Water..	Fat.....	Casein..	Ash....	
9489	4517	Hostetter Bros., and Car- tensen, Belleville.....	15.60	15.35	15.50	14.00	83.17	0.87	1.96	Illegal.*
9490	4518	C. F. Daggett, Belleville....	15.59	15.08	15.28	13.43	82.50	0.77	3.30	Illegal.*
9674	4820	J. J. Grier Hotel Co., Belle- ville.....				15.61	79.96	3.17	1.26	Passed.

*As to weight. Passed as to composition.

HAMBURG STEAK, ETC.

Insp. No. 9484, Serial No. 4486. Hamburg steak, manufactured and sold by W. W. Downing, Clay Center. No reaction for sulphites.

Insp. No. 9486, Serial No. 4487. Bologna meat, manufactured and sold by Mike and Mat Schiltz, Clay Center. Sample in good condition, but very red. Sulphites found to be present. Illegal.

Insp. No. 9487, Serial No. 4488. Bologna meat, manufactured and sold by Mike and Mat Schiltz, Clay Center. Sample very red but in good condition. Sulphites present. Illegal.

Insp. No. 9488, Serial No. 4489. Pork sausage, manufactured and sold by Mike and Mat Schiltz, Clay Center. Indications of the use of sulphites, but evidence not positive as sample was too small for further determinations.

Insp. No. 9491, Serial No. 4490. Hamburg steak, manufactured by Richardson & Cox, Belleville, and sold by L. C. Shaw, Belleville. Sample in good condition and there were no reactions for sulphites. Passed.

Insp. No. 9534, Serial No. 4738. Hamburg steak, manufactured and sold by S. J. Behmer, Sabetha. No reaction for borates or sulphites. Passed.

Insp. No. 9535, Serial No. 4739. Hamburg steak, manufactured and sold by A. B. Hamacher, Sabetha. No reaction for borates, but good reaction for sulphites. Illegal.

PICKLES, RELISHES, ETC.

Insp. No. 7879, Serial No. 4494. Pickles, Red Rambler brand, manufactured by the Otto Kuehne Preserving Co., Topeka. Jobber, Davis Mercantile Co., Topeka; sold by J. Gallagher, Topeka. Sample taken April 12, and was in good condition. Odor and flavor good. Alum and turmeric present. Illegal.

Insp. No. 7886, Serial Nos. 4495 and 4496. Pickles, Silver Leaf brand, one plain and one mixed, manufactured by the Otto Kuehne

Preserving Co., Topeka, and sold by the Dibble Grocery Co., Topeka. Samples taken April 13, and were in good condition. Alum and turmeric present in both samples. Illegal.

Insp. No. 7887, Serial No. 4497. Pickles, Silver Leaf brand, manufactured by the Otto Kuehne Preserving Co., Topeka, and sold by Stapel & Wright, Topeka. Sample taken April 13, and was in good condition. Alum and turmeric present. Illegal.

Insp. No. 9421, Serial No. 4519. Mixed pickles, Magic City brand, manufactured by the Squire Dingee Co., Chicago, and sold by J. E. Kermoade, Atchison. Sample taken March 17, and was rather poor in quality and soft. Alum and turmeric present. Illegal.

Insp. No. 9432, Serial No. 4520. Sour pickles, Magic City brand, manufactured by the Squire Dingee Co., Chicago. Jobber, Nave-McCord Mercantile Co., St. Joseph, Mo. Seller, H. M. Stanley, Highland, Kan. Sample taken March 22, was in good condition and of fair grade. Alum and turmeric present. Illegal.

Insp. No. 9435, Serial No. 4521. Dill pickles, Gold Medal brand, manufactured by the Squire Dingee Co., Chicago, and sold by Neal Gallagher, Sparks, Kan. Sample taken March 23, and did not look or taste like regular dill pickles. Alum present. Illegal.

Insp. No. 9437, Serial No. 4522. Sweet pickles, Williams's brand, manufactured by the Williams Bros. Co., Detroit, Mich. Sample of fair grade and in good condition, but contained alum and benzoates. Illegal.

Insp. No. 7857, Serial No. 4523. Dill pickles, canned, Seal brand, manufactured by Pickarts Vinegar and Pickle Co., Leavenworth, and sold by N. E. Engle, Manhattan. Sample taken March 18, and was not in good condition. Can swollen, pickles soft. No alum.

Insp. No. 9424, Serial No. 4527. Sour pickles, manufactured by the National Pickle and Canning Co., St. Louis, Mo.; jobber, Dodson and Braun Branch, St. Louis; seller, Mrs. J. E. Allen, Atchison. Sample taken March 18, and was in good condition. Alum and turmeric present. Illegal.

Insp. No. 9425, Serial No. 4528. Pickles, Perfection High Grade brand, manufactured by the Marshall Vinegar Co., Marshalltown, Iowa, and sold by August Hagan, Atchison. Sample taken March 18, and was spoiled. Alum and turmeric present. Illegal.

Insp. No. 9439, Serial No. 4529. Sweet pickles, Monsoon brand, sold by C. L. Baird, Atchison; jobber, Sprague, Warner & Co.,

Chicago. Sample taken March 28, and was in good condition, but copper was found to be present. Illegal.

Insp. No. 9441, Serial No. 4530. Mixed pickles, Madison brand, manufactured by Alart & McGuire, New York, and sold by the Dibble Grocery Co., Topeka. Sample taken April 3, and was in good condition. An aluminum salt and turmeric present. Illegal.

Insp. No. 9444, Serial No. 4531. Sweet pickles, Export brand, manufactured by the Haarmann Vinegar and Pickle Co., Omaha, and sold by White Bros., Marysville. Sample contained turmeric and a large amount of some aluminum salt. Illegal.

Insp. No. 9445, Serial No. 4532. Pickles (midgets), Export brand, manufactured by the Haarmann Vinegar and Pickle Co., Omaha, and sold by White Bros., Marysville. Sample taken April 4, and was in good condition. Turmeric and a considerable amount of an aluminum salt present. Illegal.

Insp. No. 9450, Serial No. 4533. Pickles (sweet), Superfine brand, manufactured by the Haarmann Vinegar and Pickle Co., Omaha, and sold by Hendricks & Son, Axtell, Kan. Sample taken April 6, and was in good condition. No label for benzoates. Sample contained benzoates, alum and turmeric. Illegal.

Insp. No. 9466, Serial No. 4534. Sour gherkins, Forest City brand, manufactured by Allen Bros., Omaha, and sold by Albert Pejasa, Hanover, Kan. Sample taken April 19, and was in good condition. The sample contained an aluminum salt and turmeric. Illegal.

Insp. No. 9471, Serial No. 4535. Gherkins, Superfine brand, manufactured by the Haarmann Vinegar and Pickle Co., Omaha, and sold by M. Flaherty & Son, Hanover. Sample taken April 19, and was in good condition, but was found to contain an aluminum salt and turmeric. Illegal.

Insp. No. 9472, Serial No. 4536. Mixed pickles, Superfine brand, manufactured by the Haarmann Vinegar and Pickle Co., Omaha, and sold by M. Flaherty & Son, Hanover. Sample taken April 19; was somewhat moldy and contained an aluminum salt and turmeric. Illegal.

Insp. No. 9465, Serial No. 4537. Sweet gherkins, Forest City brand, manufactured by Allen Bros., Omaha, and sold by Albert Pejasa, Hanover. Sample taken April 19, and was in good condition, but contained an aluminum salt and turmeric. Illegal.

Insp. No. 6517, Serial No. 4538. Spiced pickles, Prairie King brand, manufactured by the Wichita Vinegar Works, Wichita, and

sold by them. Sample taken March 24; was in good condition, and gave no reactions for alum turmeric or preservatives. Passed.
Insp. No. 7863, Serial No. 4539. Mustard, Duesseldorfer brand, manufactured by the Otto Kuehne Preserving Co., Topeka, and sold by C. A. Arthur, Junction City. Sample taken March 24, and was in good condition, but contained turmeric. Illegal.

Insp. No. 9422, Serial No. 4543. Sweet Relish, Hawkeye brand, manufactured by the Hawkeye Pickle Works, Burlington, Iowa, and Kansas City, Mo., and sold by J. H. Durst, Atchison. Sample taken March 17, and was in good condition. Sodium benzoate, alum and turmeric are present, but are declared on the label. Illegal.

Insp. No. 9461, Serial No. 4544. Celery Relish, Silver Leaf brand, manufactured by the Otto Kuehne Preserving Co., Topeka, and sold by Mrs. L. E. Clapp, Hollenberg. Sample taken April 18, and contained alum and turmeric and 1.45 per cent of sodium benzoate. Illegal.

Insp. No. 9462, Serial No. 4545. Mexican Hot, Silver Leaf brand, manufactured by the Otto Kuehne Preserving Co., Topeka, and sold by Mrs. L. E. Clapp, Hollenberg. Sample taken April 18, and was in good condition, but contained alum and turmeric in addition to the sodium benzoate, which is declared on the label. Illegal.

Insp. No. 6517, Serial No. 4546. Celery Relish, Prairie King brand, manufactured by the Wichita Vinegar Works, Wichita. Sample taken March 24, and was in good condition. Turmeric found to be present. Illegal.

Insp. No. 9467, Serial No. 4547. Red Hot, Haarmann's Superfine brand, manufactured by the Haarmann Vinegar and Pickle Co., Omaha, and sold by W. J. Schwartz, Hanover. Sample taken April 19; contained alum and turmeric, which were not declared on the label. Illegal.

Insp. No. 9470, Serial No. 4548. Pearl onions, Haarmann's Superfine brand, manufactured by the Haarmann Vinegar and Pickle Co., Omaha, and sold by W. J. Schwartz, Hanover. Sample in good condition, taken April 19, but gave reactions showing that sulphites had been used in bleaching the onions. Illegal.

Insp. No. 6525, Serial No. 4549. Mustard, Prairie King brand, manufactured by the Wichita Vinegar Works, Wichita. Sample taken March 24 and was in good condition. Passed.

Insp. No. 9451, Serial No. 4550. Pearl onions, Haarmann's

Superfine brand, manufactured by the Haarmann Vinegar and Pickle Co., Omaha, and sold by Hendricks & Son, Axtell. Sample taken April 6 and was in good condition, but gave reactions for sulphites. Illegal.

Insp. No. 9449, Serial No. 4551. Horse-radish, Haarmann's Superfine brand, manufactured by the Haarmann Vinegar and Pickle Co., Omaha, and sold by F. M. Gaylord, Axtell. Sample taken April 6 and was in good condition. Passed.

Insp. No. 7825, Serial No. 4552. Horse-radish, Sunburst brand, manufactured by the Theo. Poehler Mercantile Co., Lawrence, and sold by J. Longabaugh, Halifax. Sample taken April 5 and was in good condition. Passed.

WATER SURVEY No. 11.

(Continued from October BULLETIN.)

E. H. S. BAILLY, Ph. D., Director, and C. C. YOUNG, M. S., Chemist.

NOVEMBER 20, 1911.

The following are analyses made in the laboratory since the date of the last report of waters used as school supplies. No source of supply should be given more careful attention than those used by district schools. We wish to call the attention of county health officers to the fact that this laboratory is willing, at any time, to investigate and analyze waters from school supplies. Obtain directions before sending samples.

DETAILS OF ANALYSES.

399. Atchison, received from J. A. Shoemaker. The water shows no marked evidence of pollution, however advice was given to protect the well against surface drainage.

400. Atchison, St. Benedict's College. Sample was collected at request of Dr. Crumbine when making inspection of schools. Water found to have changed in character since previous analysis. It was advised that careful supervision of drainage area be maintained and frequent analyses of water made to determine whether this change was following a regular progression.

401. Agenda, received from A. E. G. Kent, school district No. 40. This was a relatively good water for drinking purposes. Chemical analysis showed no marked evidence of pollution. The advice was given to protect the well according to plans sent out by this laboratory.

402. Atchison, sample received from E. H. Fuhrman, showed no evidence of pollution.

SANITARY ANALYSES OF SCHOOL SUPPLIES. (Parts per million.)

Number	Chr.	Date, 1911.	Nitrogen in free NH ₃	Nitrogen in alp. NH ₃ .	Nitrogen in NO ₂ .	Nitrogen in NO.	Chlorine	Solids	Oxygen consumed
399	9-16	0.104	0.098	0.700	none	5.0	296	0.279
400	7-12	0.064	0.092	28.000	0.004	60.0	526	0.060
401	7-29	0.093	0.140	0.800	none	39.4	536	0.060
402	10-27	0.144	0.144	0.200	none	29.4	295	1.200
403	6-23	0.066	0.066	40.000	traces	43.0	552	0.480
404	6-23	0.066	0.062	1.500	traces	16.0	382	0.480
405	10-16	0.090	0.082	0.500	traces	16.0	195	3.160
406	10-16	0.016	0.140	none	none	4.0	104	6.180
407	10-18	0.095	0.184	1.000	traces	11.0	189	6.180
408	10-18	0.085	0.118	0.100	0.010	41.0	527	1.070
409	10-18	0.280	0.152	1.000	traces	9.0	527	7.000
410	10-18	0.280	0.180	1.000	0.005	4.0	388	0.196
411	6-23	0.178	0.180	1.200	0.005	4.0	459	1.200
412	10-27	0.008	0.088	2.500	0.001	4.0	218	0.650
413	10-27	0.008	0.084	2.000	traces	6.0	844	0.650
414	11-4	0.082	0.054	7.000	none	20.0	94	1.110
415	6-23	0.042	0.266	8.000	0.0075	14.0	220	1.110
416	6-23	0.158	0.148	8.000	0.0075	15.0	763	3.950
417	6-23	0.080	0.148	traces	1.00	412.0	1,194	0.418
418	8-22	0.028	0.076	1.000	traces	14.0	1,982	0.418
419	8-22	0.028	0.118	1.000	traces	21.0	684	0.690
420	8-22	0.028	0.044	10.000	traces	16.0	685	0.690
421	10-27	0.028	0.070	10.000	traces	560.0	1,587	none
422	6-19	0.086	0.106	4.000	traces	45.0	416	0.450
423	6-19	0.064	0.068	none	traces	11.0	300	0.100
424	6-19	0.158	0.148	0.800	0.010	2.0	85	8.800
425	6-19	0.048	0.148	2.500	0.010	28.0	1,427	0.870
426	6-19	0.064	0.148	4.000	0.004	13.0	479	0.870
427	10-18	0.064	0.100	none	traces	38.0	510	0.650
428	6-30	0.068	0.310	none	traces	4.0	83	20.800
429	16-2	3.240	0.104	15.000	0.800	22.0	983	1.800
430	6-23	0.028	0.148	7.500	traces	50.0	689	0.240
431	11-7	0.014	0.082	3.000	traces	232.0	1,730	0.660
432	10-17	0.012	0.060	none	traces	1,720.0	.....	.....
433	10-17	0.018	0.064	1.700	traces	10.0	248	6.800
434	10-17	0.080	0.074	1.700	traces	8.0	72	0.690
435	10-17	0.082	0.108	0.500	traces	2.0	72	1.100
436	10-17	0.082	0.108	1.000	traces	5.0	149	14.800
437	10-17	0.082	0.108	2.000	traces	8.4	34	3.160
438	10-17	0.084	0.098	2.000	traces	4.6	90	0.987
439	10-17	0.084	0.098	2.000	traces	4.6	96	1.960
440	10-17	0.084	0.098	2.000	traces	5.0	96	1.960
441	10-17	0.086	0.224	none	traces	5.0	187	10.800

*Too small sample.
**Too high to read.

403. Belle Plaine, received from Dr. John J. Sippey. Water showed evidence of pollution in that the nitrates were excessively high. It was advised that the vaults near this well be removed.

404. Burns, sample received from F. I. Bill, school district No. 47. Water showed no marked evidence of pollution, and advice was given to protect the well according to plans enclosed in report.

405. Council Grove, sample received from W. E. Crawford. This is a sample of city water at Council Grove. Analysis indicates that the water is not receiving proper filtration. The bacteriological examination showed the presence of *B. coli*.

406. Columbus, sample received from M. L. Catlett, superintendent of schools. The three cisterns were reported as not clean and advice was given that they be cleaned out at once. The shallow well was grossly polluted and showed presence of *B. coli*. The deep well showed little evidence of pollution; however the school authorities were advised to investigate the care used by the water-works company in handling this supply.

407. Elmdale, school well, received from Mrs. Ella Jaques. Showed some evidence of pollution, but not necessarily from dangerous sources. The plans for protecting the well were sent to Mrs. Jaques and advice given that she protect the well against surface drainage.

408. Fall Leaf, received from Mr. Geo. Ledger, district No. 52. Water receiving some pollution from surface source. He was advised to protect the well according to diagram enclosed with report.

409. Frankfort, received from Dr. A. M. Brawley. Water showed no serious evidence of pollution.

410. Howard, sample received from Mr. Earnest Bennett, superintendent of schools. This water is taken from cisterns which supply the school with drinking water. It is collected from papier maché roofing, which is undoubtedly the cause of the particularly high chlorine. Outside of this the water shows no evidence of being other than a good drinking water.

411. Hiawatha, received from J. R. Moyer, school district No. 30. The well is receiving some pollution, but from the location I judge the well could be protected very satisfactorily.

412. Hutchinson, sample received from F. M. Amrine, superintendent of Kansas State Industrial Reformatory. *a*. Shows the water to be grossly polluted. The source was thoroughly cleaned out at the suggestion of Mr. Veatch, and another, sample *b*, sent in two months later. This second sample bore very little resemblance to the first with the exception that it also was grossly polluted.

These results were turned over to Professor Hoad, state sanitary engineer, who took up the disposition of the matter with Superintendent Amrine.

413. Holton, sample received from Dr. Chas. Siever. This analysis was made to find out whether or not the cemetery which was near at hand was polluting the water. The analysis gave no evidence that it was. The water is very hard, containing large amounts of soluble salts, principally calcium sulfate, calcium bicarbonate, and sodium sulfate. These salts would undoubtedly have a marked physiological effect upon the children drinking the water. It was advised that a new supply be found if possible.

414. Herington, received from Mr. Francis Rob. These waters were analyzed a year ago, and showed practically no change in the character. Should make very satisfactory supplies.

415. Kanopolis, received from A. H. Schumacher. This water showed evidence of pollution and was also very hard. Advice was given to seek a new supply.

416. Kanopolis, sample received from Dr. A. O'Donnell. These waters showed no evidence of pollution, but advice was given to protect them thoroughly before the children were allowed to drink the water.

417. Lecompton, received from Dr. C. C. Kerr, cistern water. This water showed considerable organic matter and advice was given to clean out the cistern thoroughly and collect the water from the latter part of the rains only.

418. Lovewell, sample received from S. J. Batchelder. This was a very hard water, but showed no marked evidence of pollution.

419. Parker, received from J. W. Millard. This water showed evidence of pollution and it was suggested that the closets in the vicinity be moved or chloride of lime be used daily.

420. Sedgwick, sample received from Mr. R. R. Hobble. The water showed no evidence of pollution, but advice was given to protect the well against any surface water entering.

421. Sycamore, sample received from Dr. O. W. Ellison. *a* Cistern water, the analysis of which showed it to contain large amounts of organic matter which are unnecessary if the roof and pipes are taken care of. *b* Shallow well water, one of the dirtiest waters that has been examined in the laboratory for some time.

422. St. Mary's College, sample collected at request of Dr. Crumbine when making school inspection. The analysis showed the water to be fully as good as when an analysis was made in 1908.

423. Udall, sample received from Mr. J. S. Stone, district No.

11. Well receiving some pollution and it is a very hard water. Plans for protecting the well against surface drainage were sent with report.

424. Vinland, received from County Superintendent C. R. Hawley. This water contained approximately 3 gms. per liter of common salt; also contained considerable Glauber's salts. The analysis showed the water was unfit for school use and could only be used as a mineral water under any circumstances.

425. Wellington, sample received from Dr. C. L. Millington. These waters are used at the ward schools shown in table. *c*, *f*, and *g* showed marked evidence of pollution. The others showed considerable organic matter and dirt. Particularly this is so with *a*, *d*, and *h*. Advice was given as to proper method of collecting water and keeping filters clean.

The Standard for Condensed Milk.

By J. T. WILLARD, Food Analyst for the Board.

The standard for condensed milk adopted by the United States department of agriculture some years ago and which was carried over essentially into the Kansas standards has not been found satisfactory. In food inspection decision No. 131, the department of agriculture announced its abandonment of the standard and the substitution of another, regarded as reasonable and just for unsweetened condensed milk. The special feature of the requirements in respect to chemical composition, being decidedly unusual, has led to considerable difficulty in understanding it. This article is designed to clear up the matter if possible, for inspectors and consumers.

The old United States standard provided that unsweetened condensed milk should contain not less than 28 per cent of milk solids, of which not less than 27.5 per cent is milk fat. The Kansas standard was the same excepting that it was provided that the milk fat should be at least 27.6 per cent of the total solids. The fundamental difficulty with these standards was that they were based upon the standard for milk, which provided that it must contain not less than 3.25 per cent of milk fat and not less than 8.5 per cent of solids not fat. If a milk shows these percentages of fat and solids not fat, the total solids would be 11.75 per cent, and 3.25, the percentage of milk fat, is 27.6 per cent of 11.75, the percentage of total solids.

This standard for milk was never designed to represent average milk and is to be taken as a minimum and is made low enough to include practically the lowest milk that should be regarded as a normal, legitimate, commercial product. Average milk is of considerably different composition, and it is the mixed milk of herds and usually of many herds that constitutes the supply from which condensed milk is manufactured. A suitable standard for condensed milk must therefore be based upon the composition of average milk, rather than upon that of extremely good, or extremely poor milk.

Analyses of 13,936 samples of milk entering the London market in 1901 showed an average composition of 3.72 per cent of fat, and 8.91 per cent of solids not fat, or 12.63 per cent of total solids. Comparing the fat with total solids in this case it is seen that 3.72 is 29.45 per cent of 12.63; that is, the percentage of fat is 29.45 per cent of the total solids instead of 27.6 per cent. Manufacturers of condensed milk found difficulty in preparing a product satisfactory in its physical conditions that would comply with the requirements of the old standard. The standard, furthermore, made it easy for manufacturers to remove a portion of the fat, thus bringing it down to the standard of 27.6 per cent of the total solids instead of 29.45 per cent.

To meet both of these difficulties the board of food and drug inspection of the department of agriculture adopted a provision that condensed milk should contain such percentages of total solids and fats that "the sum of the two shall not be less than 34.3 and the percentage of fat shall not be less than 7.8." The factor 34.3 thus includes the fat twice and the standard abandons any statement of the relation between fat and the total solids, but guards against a deficiency of fat by specifying the amount that the finished product shall contain, namely, 7.8 per cent. The purpose of this peculiar provision in respect to the factor 34.3 is to provide some flexibility in the standard to make it applicable to milks containing different percentages of fat. As milk fat is the ingredient of condensed milk in which most consumers are interested, more than in any other, some concession is made, through this flexibility in the standard, to milk that is richer in fat than the average. The following examples will show how the standard works:

If the milk used for evaporation is of the average quality and contains 8.91 per cent of solids not fat and 3.72 per cent of fat, that is, 12.63 per cent of total solids, the total solids plus fat,

12.63 plus 3.72, is equal to 16.35. To bring this milk to such a strength that the total solids plus the fat will be equal to 34.3 per cent, it will be necessary to concentrate the milk 2.1 times, that is, 2.1 volumes are evaporated to one volume. All of the solid constituents are then present in percentages 2.1 times as great. As the original milk contained 3.72 per cent of fat, the condensed milk will contain 7.8 per cent, for 3.72 multiplied by 2.1 equals 7.81. It will be seen, then, that such average milk when reduced to slightly less than half its original volume will possess the required amount of fat, and the fat plus the total solids will show the specified amount. In this case the total solids in the evaporated milk would be 26.52 per cent, which is less than the old standard specified.

Let us suppose that milk containing only 3.25 per cent of fat and 8.5 per cent of solids not fat is used in the preparation of the condensed milk. To bring the fat content up to 7.8 per cent it is necessary to condense the milk 2.4 times, that is, 2.4 volumes of the original milk must be concentrated to one volume of the evaporated milk. In doing this the percentage of total solids becomes 2.4 times 11.75, or 28.2, which is a slightly higher figure than the old standard required. The total solids plus fat would be 36, a figure materially higher than 34.3, which the new standard specifies as a minimum for this factor.

On the other hand, suppose that milk is used containing 4.5 per cent of fat and 9.1 per cent of solids not fat. The total solids would be 13.6 and the total solids plus fat, 18.1. In order to bring the factor for total solids plus fat up to 34.3 it would be necessary to condense 1.9 times, that is, 1.9 volumes would be concentrated to one volume. However, in thus attaining the value 34.3 for total solids plus fat it will be necessary to bring the percentage of fat in the condensed product to 8.55, for 4.5 multiplied by 1.9 equals 8.55. Similarly the percentage of total solids, 13.6, multiplied by 1.9 equals 25.84. Thus although the condenser is not obliged to concentrate the milk to as high a degree and the percentage of total solids is only 25.84, the percentage of fat is 8.55 or three-fourths of one per cent higher than the standard requires.

It is thus seen that the concession which the peculiarly worded standard makes to milk of high percentage of fat works no injury to the consumer in respect to the fat content. In any case in which total solids is the important factor it is obvious that the

product made by evaporating the milk poor in fat might be regarded as of greater value than that made by concentrating milk rich in fat.

It is not often that you will find clean people living in a dirty city—like town, like people.

Sound teeth in sound bodies, with wholesome food, pure water, and fresh air, are the conditions for high body resistance, and efficiency in work.

Preventive Rules for Colds.

The committee on prevention of disease of the Boston Chamber of Commerce has compiled a statement of the causes of colds and a few rules which will aid in avoiding them, which are so up-to-date with our present knowledge that they are herewith reproduced for the readers of the Bulletin:

Colds are contagious. They are caused by germs. You catch cold just as you catch diphtheria. The germs of colds are spread from the nose and mouth of one person to another.

Draughts, wet feet, chilling of the body and sudden changes of temperature will not in themselves cause a cold (stiff neck and other muscular pains are not here included). These conditions may weaken the body, help the germs, favor the development of colds and make them worse. It is worth noting that arctic explorers never suffer from colds until they become infected from their fellowmen on their return to civilization.

Do not get close to others who have colds.

Do not use handkerchiefs, towels and cups that have been used by people who have colds. Even though you do get your cold from your neighbor, don't pass it on.

Do not sneeze or cough except into your handkerchief.

Do not spit on the floor; to do so may spread colds, tuberculosis and other diseases.

Do not neglect a cold. It may lead to serious complications. During the first few days, if you have fever, stay in bed. This will help you and protect others from getting your cold. Take a laxative and use simple household remedies. If these do not help you, call a doctor.

You will be able to resist the germs causing colds if you keep your body in good condition.

Breathe pure air, avoid dust, take regular exercise; get plenty of sleep and rest; eat wholesome food and do not sit for long hours in a stuffy, close room.

Colds come from the bacteria in your mouth, teeth, nose and throat; therefore keep these parts clean.

The Flueless Gas Heater.

As a means of warming a room there are few things more pernicious, from a hygienic standpoint, than those oil or gas heating apparatus which are used without a flue pipe to carry off the products of combustion. They not only vitiate the air directly by consuming the oxygen and replacing it with noxious gases, but indirectly they put a premium on insufficient ventilation by making it practically imperative that the windows and doors be shut in order to accomplish the object attained—that of raising the temperature of the room in which they are used. In view of the obvious objections to this form of household heating apparatus, therefore, an advertisement by a gas company which has recently appeared in most of the Chicago papers is much to be deplored. This advertisement sets forth the virtues of a "gas heater" which we are told "needs no flue pipe. . . . It consumes less oxygen than one person and really *purifies the air* by burning dust and germs." Whether the promulgation of such dangerous untruths as these is due to ignorance on the part of the public service corporation which disseminates them or to the unfettered imagination of its writer of advertising copy, makes little difference. It should be stopped.—*Journal A. M. A.*

Health Items from the Oketo Eagle.

"There is nothing in your valuable paper I read with more interest," writes Judge R. A. Dickinson, "than those thrilling items telling of how some poor soul was snatched from the jaws of death by the judicious us of Dr. Killen's Elixir of Rhubarb, or a few bottles of Dr. Limberger's Celebrated Essence of Jimson Weeds. It reminds me of a painful experience I had a few years ago when I was taken with a stitch in my back. Wow! how it hurt! I was laid up for weeks and was afraid I never would be able to do another day's work. A friend recommended Doctor Snicklefritz's Extract of Cucumbers. I took fifty-seven bottles, and thank God I am twenty years younger to-day than I ever was before."

"I had a dear friend," writes a prominent lady temperance worker, of Oketo, "who had a bad case of James Jams (I consider it vulgar to say Jim Jams). He took ninety-seven bottles of lemon extract and was completely and permanently cured of the drink habit. Yes, we planted him in a beautiful little cemetery with a southern exposure. May he rest in peace."

French peasants will not eat blackberries, writes a correspondent, because they believe the crown of thorns to have been woven of brambles, and the bramble is therefore sacred. While touring near Abbeville once I saw a virgin bush of such gorgeous berries that I jumped off my bicycle and began to feast. An old woman stopped and stared at me with an expression which started at horror, and passing through ferocity, achieved pity. At length she made the sign of the cross and went on her way.

Cookery a Fine Art.

Cookery should be a fine art, but, alas, in many kitchens it is thought of as drudgery, and put out of the way as soon as possible. The development and progress of cookery has gone hand in hand with civilization. The more enlightened and intelligent a people, the more attention they pay to cookery. It is an art as old as history and its evolution is as interesting a study as the evolution theory is to the scientist.

Did you ever think that more people are spending all or part of their time cooking than in any other occupation?

The importance of food selection and preparation is the most important single factor on which rests the health, happiness and prosperity of mankind.

Cookery, like all other arts, has its laws of proportion, or right values, its laws of harmony and contrast.

Cookery appeals to the sense of taste as music appeals to the hearing and as "suns and skies and clouds of June" appeal to the sight.

An educated sense of taste is as highly gratifying as the indulgence of any of the senses and as necessary for good digestion and physical as well as mental well-being.

The simple and fundamental study of cookery should be the aim of every young woman. She should know when she has given her family a well-balanced meal, how to feed the sick, the aged as well as the infants. She should know that climate, age, sex and health should enter into the arrangements for the menus.

To serve a meal that is attractive to the eye, satisfying to the taste and sufficiently nourishing to the body, food that is digestible and the cost of which is kept within reasonable limits, is an accomplishment that any young woman may be proud of attaining.

Such accomplishment comes only by hard work, study and application, but it is worth the price many times over.

What Apple Pie Does.

Do you like apple pie? Then you are not past redemption. For we read in the new number of the "Quarterly Paper of the Guild of SS. Paul and Silas"—one of the many phases of the activities of Canon Horsley, who is the warden and founder of the guild which interests itself in the welfare of prisoners: "It is on record that more than fifty years ago the warden of Millbank Prison stated that he always had hopes of the final reformation of a prisoner, no matter how violent or apparently depraved he might be, so long as he retained an appetite for apple pie." Can it be that this wholesome appetite accounts for an art gallery where Millbank Prison frowned fifty years ago?

Stamp Out Consumption by Buying Red Cross Christmas Seals



Why You Should Join the Fight

BECAUSE one death in every ten in your locality is caused by tuberculosis.

BECAUSE every seal you buy will be used to fight consumption in your community.

BECAUSE tuberculosis cannot be stamped out unless you do your part.

Red Cross Seals are Sold Everywhere

ONE CENT EACH

*Mrs. B. B. Smyth, State Agent, Room 9, Fourth Floor,
State House. Topeka, Kansas*

BULLETIN
OF THE
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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DEACON, Registrar.

No. 12.

DECEMBER, 1911.

VOL. VII

KANSAS
Health Almanac
For 1912.



“Good Health for Every Day of
Every Month”

DEPARTMENT
OF THE
Kansas State Board of Health.

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ACKNOWLEDGMENT.

It is the belief of the writer that the "Virginia Health Almanac for 1911" is the most interesting, instructive and useful public health pamphlet ever issued by any Department of Health in America.

Upon our request, Dr. Ennion G. Williams, Secretary of the Virginia State Board of Health, has generously consented to permit us to reproduce it for Kansas. Such changes have been made as apply to our own state and conditions.

Our thanks are also due to Hon. Geo. W. Martin, Secretary of the Kansas State Historical Society for the dates of interesting Kansas events which are herewith presented under "important days."

S. J. CRUMBINE, M. D.,
Secretary and Editor.

Foreword.

The Kansas State Board of Health aims to keep before the people at all times the saving truths of Public Health. The Department does not wish to impress the people of the state once a year with an array of meaningless statistics. It does not wish to sound a single trumpet warning against one disease. It wishes as far as possible to inform every citizen, every day of the year, that much sickness is useless and much disease preventable.

This almanac is issued in accordance with this aim. By it the Department hopes to give every citizen who wishes it daily information about the more prevalent diseases, and to remind him, as he reads the hour of sun-rise or sun-set, that every hour can aid in the conquest of disease.

This almanac contains only the known and tested facts of sanitary science. There is no speculation, no theorizing. Any man can accept as tried and proven every assertion made here regarding disease. Any man accepting these facts, practicing these principles, may be assured that this labor will bring him better return than any similar investment he can make.

The Department trusts this almanac will be hung on the corner of every mantel in Kansas, to be used frequently, to be consulted regularly. Preserve this little pamphlet. It may save a life. It may prevent much sickness. It will certainly help towards a healthier, happier life.

Critical readers in looking over the "important days" listed in the body of the almanac may fail to find reference to some of the important events in Kansas history. Space prevents the recording of more than a single event on one day, and as it often happened that a number of important events occurred on the same day, the editor was obliged to select the one which, in his judgment, was the most important to the state at large, or which most influenced Kansas history.

January for Smallpox.

Every January smallpox reappears in Kansas. Several hundred people at the very least have it. Houses are quarantined; neighborhoods are alarmed; business is damaged; many men and women suffer; some die. All of this is unnecessary, most of it is criminal. Every case of smallpox contracted in Kansas should be and can be prevented.

More than a hundred years ago Edward Jenner proved that vaccination prevents smallpox. Thousands of men have proved it since. Any man can prove it to-day, and in proving it give himself absolute insurance against this disease. Vaccination is far less dangerous than cutting a corn. It is less painful than the average cut finger. Yet it means years of protection against a loathsome disease.



NEVER VACCINATED.

TO PREVENT SMALLPOX:

**VACCIN
ISOLATE
FUMIGATE**

The unvaccinated continue to have smallpox.

1st month.

January.

31 days.

D. of mo.	D. of wk.	IMPORTANT DATES IN KANSAS HISTORY.	Sun.		Moon sets.
			Rises.	Sets.	
1	Mo	Anti-pass law in operation, 1908.	7 14	4 22	3 51
2	Tu	Two hundred Mennonites arrive at Great Bend, 1875.	7 14	4 23	5 13
3	We	Get vaccinated.	7 14	4 23	6 32
4	Th	State Historical Soc. library began in auditor's office, 1875.	7 14	4 24	rises
5	Fr	Free-state legislature meets at Topeka, 1858.	7 14	4 25	5 45
6	Sat	Benjamin Franklin born, 1706 (O. S.).	7 14	4 26	7 8
7	Su	Whole state shaken by earthquake, 1906.	7 14	4 27	8 28
8	Mo	Geo. W. Glick inaugurated first Democratic governor, 1883.	7 13	4 28	9 42
9	Tu	To avoid colds, keep your feet warm and house ventilated.	7 13	4 29	10 51
10	We	"Legislative war"—two houses of representatives, 1898.	7 13	4 30	morn
11	Th	Free Missouri sends greetings to Kansas legislature, 1865.	7 13	4 31	0 1
12	Fri	Most colds are catching.	7 13	4 32	1 8
13	Sat	The neglected cold is the season's greatest danger.	7 12	4 34	2 14
14	Su	Kaw Indians cede 2,000,000 acres of land to U. S., 1846.	7 12	4 35	3 20
15	Mo	Dr. Chas. Robinson elected governor, 1856.	7 11	4 36	4 24
16	Tu	First school in Kansas territory opened, 1855.	7 11	4 37	5 25
17	We	As the weather grows colder take more exercise.	7 10	4 38	6 20
18	Th	Nebraska south of Platte river seeks annexation, 1858.	7 10	4 39	7 7
19	Fri	Lee's birthday, 1807. Paul Revere's ride, 1775.	7 9	4 41	sets
20	Sat	Wm. T. Sherman applies for notary commission, 1859.	7 9	4 42	5 46
21	Su	Statue of Sen. John J. Ingalls dedicated, 1905.	7 8	4 43	6 50
22	Mo	Gov. A. H. Reeder issued order for first census, 1855.	7 8	4 44	7 54
23	Tu	Gift of 20 acres of land for capitol accepted, 1862.	7 7	4 45	8 59
24	We	Birth of Elizabeth Simerwell, first white girl, 1835.	7 6	4 47	10 4
25	Th	Conversion of St. Paul.	7 5	4 48	11 10
26	Fri	Overland mail reopened after Indian troubles, 1865.	7 5	4 49	morn
27	Sat	W. A. Peffer elected U. S. senator by People's party, 1891.	7 4	4 50	0 20
28	Su	Provide dust baths for the poultry.	7 3	4 52	1 32
29	Mo	Kansas admitted to the Union, 1861. Kansas Day.	7 2	4 53	2 49
30	Tu	Every careless consumptive infects at least four others.	7 1	4 54	4 6
31	We	Wyandottes cede lands in Kansas to United States, 1855.	7 0	4 56	5 17

MOON'S PHASES.

- ☉ Full Moon, 4th day, 8 h. 30 m., morning.
- ☾ Last Quarter, 11th day, 2 h. 43 m., morning.
- New Moon, 19th day, 6 h. 10 m., morning.
- ☽ First Quarter, 27th day, 3 h. 51 m., morning.

When grown people have "chickenpox," hang out the yellow flag and get vaccinated.

The man who says he had rather have smallpox than be vaccinated never had the smallpox.

One large pock on the arm is better than many small pocks on the face.

The man who fears the "ill effects of vaccination" will be the first man to run when smallpox appears.

Ask the man who has pock marks if he was vaccinated before he had the disease.

February for Pneumonia.

February is the worst month for the worst disease, pneumonia. This kills more people every year than any other human malady, not even excepting consumption. Pneumonia is a germ disease, and is caused by a small organism similar in some respects to those causing other diseases with which we are familiar.

The germs of pneumonia get into the lungs through the mouth, but not every man who has the germs in his mouth will have pneumonia. If he did, practically all of us would have the disease during the winter. It is only when the system is "run down" that the germs do their dread work. These are the things which make pneumonia flourish:

1. Excessive drinking alcoholic liquors.
2. Unusual exposure to extreme weather.
3. Exposure of old persons or persons suffering from other diseases.
4. Living and sleeping in badly ventilated rooms.

To avoid it:

1. Do not drink alcoholic liquors.
2. Dress warmly but not too thickly.
3. Do not needlessly expose yourself.
4. Have abundant fresh air in your living and sleeping rooms.
5. Do not have your rooms too hot and then go into the open air unprotected by wraps.
6. If exposed to extreme or rough weather, and wet or numb, undress in a warm room, rub off with a rough towel until the skin glows, then go to bed and stay there several hours.
7. Avoid overeating and keep the bowels open.
8. Keep your feet warm and your head cool.

2d month.

February.

29 days.

D. of mo.	D. of wk.	IMPORTANT DAYS IN KANSAS HISTORY.	Sun.		Moon sets.
			Rises.	Sets.	
1	Th	The unventilated gas stove is a menace to health.	6 59	4 57	6 18
2	Fri	Candelmas. Ground-hog day.	6 58	4 58	rises
3	Sat	Squatter Sovereign, Atchison, pro-slavery, started, 1855.	6 57	5 0	5 57
4	Su	Smallpox raging among the Kaw Indians, 1860.	6 56	5 1	7 17
5	Mo	Carrie Nation starts a temperance crusade, 1900.	6 55	5 2	8 32
6	Tu	Act incorporating Lincoln College (Washburn), 1865.	6 52	5 5	10 54
7	We	Charles Dickens born, 1812.	6 51	5 6	morn
8	Th	Fort Leavenworth established, 1874.	6 50	5 7	0 2
9	Fri	Inauguration of first governor of state of Kansas, 1861.	6 49	5 9	1 10
10	Sat	Minneola named as capital of the territory, 1858.	6 47	5 10	2 16
11	Su	The best nerve restorer—"keeping sweet."	6 46	5 11	3 19
12	Mo	Abraham Lincoln born, 1809.	6 45	5 13	4 16
13	Tu	Food left on teeth ferments and produces decay.	6 44	5 14	5 5
14	We	St. Valentine's day.	6 42	5 15	5 47
15	Th	Kansas women granted municipal suffrage, 1887.	6 41	5 16	6 21
16	Fri	When in doubt, do right!			
17	Sat	Gov. Lewelling calls out K. N. G. ("Legislative war").	6 39	5 18	6 50
18	Su	The most valuable asset of city—wholesome water.	6 38	5 19	sets
19	Mo	Temperance crusade reaches Kansas, 1874.	6 36	5 20	6 51
20	Tu	Legislature charters the St. Joe & Topeka railroad, 1857.	6 35	5 22	7 56
21	We	Ash Wednesday.	6 34	5 23	9 2
22	Th	George Washington born, 1732.	6 32	5 24	10 11
23	Fri	Read the labels, or don't complain if you are "stung."	6 31	5 25	11 22
24	Sat	Have you tested your cow for tuberculosis?	6 29	5 27	morn
25	Su	What? 1000 deaths from tuberculosis in Kansas annually?	6 28	5 28	0 36
26	Mo	Pittsburg Manual Training School established, 1903.	6 26	5 29	1 50
27	Tu	Wichita county-seat war reaches climax, 1887.	6 24	5 30	3 2
28	We	Territorial census completed, 3501 inhabitants, 1855.	6 23	5 32	4 6
29	Th	Widow of John Brown died in San Francisco, 1884.	6 21	5 33	4 57

MOON'S PHASES.

- ☾ Full Moon, 2d day, 6 h. 58 m., evening.
- ☾ Last Quarter, 9th day, 7 h. 51 m., evening.
- New Moon, 18th day, 0 h. 44 m., morning.
- ☽ First Quarter, 25th day, 2 h. 27 m., evening.

An open window is better than an open grave.
 Warm rooms have killed more people than ever froze to death.
 A "stiff drink" makes the stomach warm but the skin cold.
 A stitch in the underwear may save a stitch in the side.
 A mustard bath for the feet will do far more to ward off pneumonia than a gallon jug.
 If you have a pain in the side, a fever and a cough, you had better see the doctor than any friend in the world.
 Avoid patent medicines as you would a pestilence.

March for Measles.

"My children," says the average mother, "have the measles, and I am so glad they are having it now. It is not serious, you know, and they had better have it and be over with it." If the mother heard the doctor comparing the measles with smallpox or scarlet fever she would be indignant. If her child had either of these diseases, she would be horrified; whereas, if the child has measles she is seldom concerned. As a matter of fact, measles cause nearly three times as many deaths as smallpox and almost as many deaths as scarlet fever.

The danger of measles lies not so much in the disease itself as in the fact that it is extremely infectious and often leads to serious complications. Pneumonia frequently follows it; involvements of the eyes, the ears, the kidneys or the heart are not infrequent. When all the ravages of the disease are reckoned together, its annual toll in the country is dismal.

There is very little reason why any child should be subjected to measles in the hope that it will escape with a "mild case." The best way is to keep the child from the disease and the disease from the child. This is not as difficult as it seems. Sometimes outbreaks occur before the people have warning, but generally a few cases appear, from which, by neglect and carelessness, all the others follow. When measles appear, the parent should keep the child away from children who have the disease, who are recovering from it, or who have been exposed to it. If her own child has the disease, the mother should isolate the child and keep other children from it. If these things be done, there is very little prospect that the disease will make trouble. Prevention is better than cure!

Send for our Bulletin on "Measles." It will cost you nothing and may save you much.

3d month. **March.** 31 days.

D. of mo.	D. of wk.	IMPORTANT DATES IN KANSAS HISTORY.	Sun.		Moon sets.
			Rises.	Sets.	
1	Fri	First newspaper, the Shawnee Sun, 1885.	6 20	5 34	5 38
2	Sat	Worry weakens the will and perverts physical functions.	6 18	5 35	6 10
3	Su	Congressional act for road (Santa Fe trail), 1825.	6 16	5 36	rises
4	Mo	Meeting of Topeka (Free State) legislature, 1856.	6 15	5 38	7 19
5	Tu	Mercury 105 deg. above zero at Topeka, 1860.	6 13	5 39	8 31
6	We	Service is the coin that bears inscription of Jehovah.	6 12	5 40	9 43
7	Th	Act creating State Board of Health approved, 1885.	6 10	5 41	10 53
8	Fri	Health is a normal functioning of body, mind and soul.	6 8	5 42	morn
9	Sat	Sterling worth, like cream, comes to the top.	6 6	5 44	0 2
10	Su	County-seat war in Rush county, 1888.	6 5	5 45	1 8
11	Mo	Act establishing Soldiers' Orphans' Home, Atchison, 1885.	6 3	5 46	2 8
12	Tu	Arms sent to Howard co., account county-seat war, 1874.	6 1	5 47	3 1
13	We	Legislative act providing for uniform textbooks, 1897.	6 0	5 48	3 5
14	Th	David Dickinson appointed first state librarian, 1870.	5 58	5 49	4 21
15	Fri	First salt made at Hutchinson, 1888.	5 56	5 51	4 52
16	Sat	Be content—don't fret.	5 54	5 52	5 17
17	Su	St. Patrick's day.	5 53	5 53	5 39
18	Mo	Grover Cleveland born, 1837.	5 51	5 54	sets
19	Tu	Measles often prepare the soil for consumption.	5 49	5 55	6 52
20	We	"Exodus" of negroes under "Pap" Singleton arrive, 1879.	5 48	5 56	8 1
21	Th	First day of spring.	5 46	5 57	8 9
22	Fri	The best spring blood medicine—work!	5 43	5 58	10 25
23	Sat	Air and sun the bedclothes.	5 42	6 8	11 42
24	Su	Topeka constitution presented in U. S. senate, 1856.	5 41	6 1	morn
25	Mo	Dr. Simon Flexner born, 1868.	5 39	6 2	0 54
26	Tu	Henry Ward Beecher lectures in Topeka, 1878.	5 37	6 3	1 59
27	We	The food of child determines the physical future of citizen.	5 35	6 4	2 54
28	Th	The tubercular dairy cow is a menace to public health.	5 34	6 5	3 36
29	Fri	A thousand armed Missourians enter Kansas and vote, 1855.	5 32	6 7	4 10
30	Sat	First legislative election, pro-slavery ticket elected, 1855.	5 30	6 8	4 38
31	Su	First locomotive over A. T. & S. F. bridge at Topeka, 1869.	5 28	6 9	5 1

MOON'S PHASES.

- ☉ Full Moon, 3d day, 5 h. 42 m., morning.
- ☾ Last Quarter, 10th day, 2 h. 56 m., evening.
- New Moon, 18th day, 5 h. 9 m., evening.
- ☽ First Quarter, 25th day, 10 h. 2 m., evening.

Measles in a school is like fire in the tall grass.
 If you let the child have measles when he is young, you may save a doctor's bill later on, but you may have to pay the undertaker now.
 If you never have measles you'll never miss it.
 Pneumonia is the Jekyll to the measles Hyde.
 Yes, the child may get well of measles without a doctor—but he may not.
 The child who "catches everything" generally carries the burden in after years.

April for Whooping Cough.

Whooping cough and measles are the most neglected, by both the medical profession and the laity, of all the diseases with which we are acquainted. Health officers usually take small precautions to prevent their spread, and the average parents may not even consult a physician if one of their children is attacked by either of these diseases.

It is believed that whooping cough is spread almost entirely by immediate contact between the patient and a well child. This contact has to be fairly close and intimate. Every mother knows that when one child in the family has whooping cough the rest are almost sure to contract it. It is improbable that it is spread readily in the open air, unless the patient and someone else are so close together that the spray thrown from the mouth of the sick person during the act of coughing will float to the other.

One of the most striking things about whooping cough is that children under five years of age are far more liable to contract it than are those of older years. In a word, the babies are those who most suffer from whooping cough, and those whose lives are laid down in needless sacrifice to it.

While whooping cough is generally considered a trivial disease, it causes every year in the United States nearly or quite as many deaths as scarlet fever, and almost one-half as many deaths as diphtheria. This mortality is due to the complications that follow the disease rather than to the disease itself.

Parents should never voluntarily expose a child to whooping cough in order that it may have the disease while young. If a child does not have whooping cough before five years of age, its chances of taking the disease are greatly reduced. Parents should remember that the chances of death under five years of age are greater, almost fifty to one, than they are over that age.

Parents should protect the young children and keep them from the disease for their own sakes; they should keep the older children from the disease in order that they may not bring it into the home and infect the younger children.

4th month.

April.

30 days.

D. of Mo.	D. of wk.	IMPORTANT DATES IN KANSAS HISTORY.	Sun.		Moon rises.
			Rises.	Sets.	
1	Mo	Dr. Wm. Harvey born, 1578. (Disc. circulation of blood.)	5 27	6 10	rises
2	Tu	Wichita corn train pictured in <i>Harper's Weekly</i> , 1884.	5 25	6 11	7 21
3	We	Pony express on first trip to Pacific coast, 1860.	5 23	6 12	8 33
4	Th	Jas. H. Lane and S. C. Pomeroy, first U. S. senators, 1861.	5 22	6 13	9 43
5	Fri	Mob at Santa Fe depot, Topeka; engineers' strike, 1878.	5 20	6 14	10 51
6	Sat	687 Wyandotte Indians locate in Kansas, 1832.	5 18	6 16	11 56
7	Su	Easter.	5 16	6 17	morn
8	Mo	Militia leaves for Santa Fe strike scene at Emporia, 1878.	5 15	6 18	0 53
9	Tu	(Fort) Scott selected as site for military post, 1842.	5 13	6 19	1 41
10	We	Court decides Osage lands in favor of settlers, 1876.	5 12	6 20	2 21
11	Th	In the health of the people lies the strength of the nation.	5 10	6 21	2 53
12	Fri	Free State hotel, Lawrence, completed, 1856.	5 8	6 22	3 19
13	Sat	Henry J. Adams elected first mayor of Leavenworth, 1857.	5 6	6 23	3 42
14	Su	President Lincoln shot at Ford's theater.	5 5	6 26	4 3
15	Mo	President Lincoln dies.	5 3	6 26	4 23
16	Tu	Sound national physique better than sound national finance.	5 2	6 27	4 42
17	We	The typhoid fly is a menace to public health.	5 0	6 28	sets
18	Th	Union men tear rebel flag from steamer "Sam Gam," 1861.	4 58	6 29	8 12
19	Fri	Polluted well water cannot be purified by painting pump.	4 57	6 30	9 29
20	Sat	It takes sixteen ounces to make a pound in Kansas.	4 55	6 31	10 45
21	Su	Daily mail runs between Topeka and Pike's Peak, 1858.	4 54	6 32	11 53
22	Mo	U. S. census gives Kansas a population of 1,696,861.	4 52	6 33	morn
23	Tu	First celebration of Arbor day in Kansas, 1876.	4 51	6 34	0 51
24	We	First rails produced in the Topeka rolling mills, 1874.	4 49	6 36	1 37
25	Th	The fly the disseminator of Dirt, Diarrhoea and Disease.	4 48	6 37	2 13
26	Fri	Emigrant Aid Society incorporated by Massachusetts, 1854.	4 46	6 38	2 41
27	Sat	First enlistments for Twentieth Kansas regiment, 1898.	4 45	6 39	3 6
28	Su	Free-state convention, Topeka, nominates officers, 1858.	4 43	6 40	3 27
29	Mo	Revs. Schoenmachers, Bax and Ponziglione at Osage, 1847.	4 42	6 41	3 48
30	Tu	Rev. Pardee Butler mobbed by pro-slavery men, 1856.	4 41	6 42	4 9

MOON'S PHASES.

- ☉ Full Moon, 1st day, 5 h. 5 m., evening.
- ☾ Last Quarter, 9th day, 10 h. 24 m., morning.
- New Moon, 17th day, 6 h. 40 m., morning.
- ☽ First Quarter, 24th day, 3 h. 47 m., morning.

Air your home thoroughly daily.
 Whooping cough is highly contagious.
 Whooping cough in children under five years of age is a "grave" disease.

The parent who does n't care "two whoops" whether his child has whooping cough or not will later have those "two whoops" multiplied a thousand fold.

Parents who expose their children to whooping cough on the theory of "they must have it some time anyhow" are guilty of a crime against them.

May for Good Wells and Good Water.

May and April are the spring-cleaning months, and should serve to repair the well as much as to dust the carpets. Nothing on the farm is more important or more valuable than pure water. Bad or impure water is more dangerous than the deadliest poison, and always affects those who drink it.

Wells are polluted by organic matter getting into them. This matter comes from human beings or from animals, and is always bad for those who drink it. If it comes from a case of typhoid, or from a person who carries typhoid germs, and gets into the well, it will produce typhoid fever in those who drink it. This matter gets into the well usually through cracks in the top of the well, through soiling the bucket by touching it with dirty hands or setting it on a dirty floor, or through holes in the top of the well.

To be sure that the well is good and that dangerous material is kept out, the following things must be true:

1. The well must be not less than 15 feet deep. As a general proposition, the deeper the better.
2. The top must be sound and tight so that no water which falls on it can drip back into the well.
3. The well should be provided with a pump or with a bucket which empties itself and does not have to be touched. The double bucket is always dangerous.
4. The ground immediately around the well should be sloped up to the well and banked with clay or covered with cement, so that all water spilled around the well will run off and not trickle back.
5. The well should be cased with brick or with a terracotta pipe and the space back of the casing filled with sand.
6. A spring in a limestone county cannot be so protected as to make it perfectly sure that it does not come from underground streams at a place far from the well.
7. The spring should be so protected that water cannot wash into it from the hillside above or from the platform below. This is best done by cementing or stoning the curbing at least a foot above the ground all around and putting in a pipe for the overflow. All water should then be drawn from the overflow pipe, and not by dipping buckets or dippers.

5th month.

May.

31 days.

D. of mo.	D. of wk.	IMPORTANT DATES IN KANSAS HISTORY.	Sun.		Moon rises.
			Rises.	Sets.	
1	We	Prohibitory law takes effect, 1881.	4 39	6 44	rises
2	Th	Organization of first Indian regiment begun.	4 38	6 45	8 34
3	Fri	Lecompton <i>Union</i> started by Jones & Faris, 1858.	4 36	6 46	9 41
4	Sat	Bender murders discovered, 1874.	4 35	6 47	10 42
5	Su	Charles Robinson and A. H. Reeder indicted, 1856.	4 34	6 48	11 34
6	Mo	Treaty with the Cherokee Indians, 1828.	4 31	6 49	morn
7	Tu	Gov. A. H. Reeder escapes disguised, 1856.	4 32	6 50	0 17
8	We	Act of Congress for removal of Kaw Indians, 1872.	4 30	6 51	0 52
9	Th	John Brown born, Torrington, Conn., 1800.	4 29	6 52	1 21
10	Fri	Father Schoenmachers opened school for Indian boys, 1847.	4 28	6 53	1 45
11	Sat	Rt. Rev. J. B. Miege, first Catholic bishop of Kansas, 1851.	4 27	6 54	2 6
12	Su	Emigrant Aid Co., Boston, organized, 1854.	4 26	6 55	2 25
13	Mo	Dr. Donald Ross, discoverer of cause of malaria, born.	4 25	6 56	2 45
14	Tu	Vaccination first tried, 1796.	4 24	6 58	3 5
15	We	Waterspout northwest Elk City, 11 people drowned, 1885.	4 23	6 59	3 27
16	Th	First train to Topeka from Atchison on Santa Fe, 1872.	4 22	7 0	sets
17	Fri	William Phillips, Leavenworth, tarred and feathered.	4 21	7 1	8 26
18	Sat	Republican party organized at Osawatomie, 1859.	4 20	7 2	9 40
19	Su	Marais des Cygnes massacre, 1858.	4 19	7 3	10 44
20	Mo	Passage of homestead law, ch. 75, U. S. Statutes, 1862.	4 18	7 4	11 35
21	Tu	Sacking of Lawrence by border ruffians, 1856.	4 17	7 5	morn
22	We	Dr. Brown and Caius Jenkins arrested for treason, 1856.	4 16	7 6	0 15
23	Th	Swat the fly.	4 15	7 7	0 46
24	Fri	5 pro-slavery men killed by party under John Brown, 1856.	4 14	7 8	1 11
25	Sat	First Kansas Decoration day proclamation, 1871.	4 14	7 8	1 33
26	Su	From flies and filth to food and fever.	4 13	7 9	1 53
27	Mo	Destructive floods in valleys of Kansas rivers, 1908.	4 12	7 10	2 14
28	Tu	Laying of first rail on Lawrence & Topeka railroad, 1872.	4 12	7 11	2 36
29	We	Eugene F. Ware (Ironquill), born 1841; died July 1, 1911.	4 11	7 12	3 2
30	Th	Kansas-Nebraska bill, 1854.	4 11	7 13	rises
31	Fri	Indian raid on Saline, 1869.	4 10	7 13	8 31

MOON'S PHASES.

- ☉ Full Moon, 1st day, 5 h. 19 m., morning.
- ☾ Last Quarter, 9th day, 4 h. 56 m., morning.
- New Moon, 16th day, 5 h. 14 m., evening.
- ☽ First Quarter, 23d day, 9 h. 11 m., morning.
- ☉ Full Moon, 30th day, 6 h. 30 m., evening.

A dirty well is more dangerous than a dirty kitchen.
 The farmer who locks his doors and uncovers his well gives entrance to a more hostile enemy than any thief.
 Many a "pretty" spring has caused a dismal funeral.
 If your roof and your well both leak, fix the well first.
 A good iron pump costs less than a case of typhoid.
 Good water is one of the best insurance policies a family can carry.
 The time to fix your well is before you have to send for a doctor.

June for Infants' Complaints.

The first warm days in June bring a burden of apprehension to young mothers. The babies, who have thrived during the winter and spring, show the effects of the changed season. They grow pale; they become restless; their digestion is feeble. Every mother wonders, as she looks at her child, whether or not it will survive the warm months of summer.

No mother can get a positive answer to this question; but every mother can be assured that if she is careful of her child and mindful of a few essentials, she can give her child nine chances of living to one of dying. The most important thing to do is to watch the baby's food. If the child is breast-fed and the mother is careful in her personal habits, there is comparatively small danger. If the baby is bottle-fed, there is much greater danger of sickness, but this can be minimized by a few simple precautions. These are the things to do:

1. See that the baby gets fresh and pure milk.
2. See that the milk never sours or gets heated before being delivered to you.
3. See that the milk is kept cool after you get it.
4. See that the milk and nursing bottles are boiled as often as used.
5. See that everything used in preparing the milk is kept clean.
6. See that flies are kept away from the baby and the baby's bottles.
7. See that a physician examines your baby, prescribes its food and directs its treatment whenever the child is sick.
8. Keep the baby out of doors in the fresh air as much as possible.

The State Department of Health has issued for free distribution a pamphlet on the "Care of Babies." Send for it to-day.

6th month.

June.

30 days.

D. of mo.	D. of wk.	IMPORTANT DATES IN KANSAS HISTORY.	Sun.		Moon rises.
			Rises.	Sets.	
1	Sat	Grasshoppers begin to fly, 1875.	4 10	7 14	9 26
2	Su	Battle of Black Jack, 1856.	4 9	7 15	10 13
3	Mo	God bless the man who first invented screens.	4 9	7 16	10 51
4	Tu	First Kansas regiment, Civil War, organized, 1861.	4 8	7 16	11 22
5	We	U. S. gives Pottawatomie Indians 576,000 acres land, 1846.	4 8	7 17	11 47
6	Th	Grasshoppers swarm at Topeka, 1875.	4 8	7 18	morn
7	Fri	Oswatomie sacked by Missourians, 1856.	4 7	7 18	0 9
8	Sat	DeBourgmtont crossed Missouri river into Kansas, 1724.	4 7	7 19	0 29
9	Su	The manure heap is chief breeding place for flies.	4 7	7 20	0 47
10	Mo	John C. Fremont left Kansas for Rocky Mountains, 1842.	4 7	7 20	1 7
11	Tu	Nice, clean fly! born and bred in the privy vault! Ugh!	4 6	7 21	1 28
12	We	Marais des Cygnes flood drives Indians from homes, 1844.	4 6	7 21	1 53
13	Th	Ground broken at Atchison for Santa Fe railroad, 1860.	4 6	7 22	2 24
14	Fri	Villazur expedition left Santa Fe, N. M., 1720.	4 6	7 22	3 4
15	Sat	Leavenworth <i>Inquirer</i> suppressed by Gen. J. G. Blunt.	4 6	7 23	sets
16	Su	Steamer "Excel" starts on second trip to Fort Riley, 1854.	4 6	7 23	9 26
17	Mo	Osage Indians raid Barber and Comanche counties., 1874.	4 6	7 24	10 12
18	Tu	Plan for a sane Fourth of July.	4 7	7 24	10 46
19	We	James F. Legate <i>et al.</i> arrested, charged with treason, 1856.	4 7	7 24	11 14
20	Th	Second Kansas regiment organized at Lawrence, 1861.	4 7	7 24	11 38
21	Fri	First day of summer.	4 7	7 25	11 59
22	Sat	Fort Hays established, 1867.	4 7	7 25	morn
23	Su	A 160-lb. catfish caught in Kansas river at Topeka, 1859.	4 8	7 25	0 20
24	Mo	A sane Fourth saves lives.	4 8	7 25	0 41
25	Tu	Gen. Custer and command killed on Little Big Horn, 1876.	4 8	7 25	1 5
26	We	Work begun on Leavenworth & Lawrence railroad, 1865.	4 8	7 25	1 34
27	Th	First enlistments for 23d Kansas (Colored) infantry, 1898.	4 9	7 25	2 8
28	Fri	Tetanus anti-toxin is available from State Board of Health.	4 9	7 25	2 49
29	Sat	Dan'l Woodson, of Virginia, first territorial secretary, 1854.	4 10	7 25	rises
30	Su	Territory of Missouri divided ("Indian Territory"), 1834.	4 10	7 25	8 50

MOON'S PHASES.

- ☾ Last Quarter, 7th day, 9 h. 36 m., evening.
- New Moon, 15th day, 1 h. 24 m., morning.
- ☽ First Quarter, 21st day, 3 h. 39 m., evening.
- ☉ Full Moon, 29th day, 8 h. 34 m., morning.

Two dollars for a doctor is cheaper than one hundred dollars for a funeral.

It takes time to boil a baby's bottles, but it saves sorrow and sleepless nights.

Flies in the kitchen may be almost as dangerous as Rough-on-Rats in the pantry.

If your milk man brings you warm milk, make it hot for him.

The healthy mother who nurses her baby gives it a life insurance policy at a mighty low premium.

The dairyman who adulterates his milk should be sent to jail.

July for Flies and Mosquitoes.

By July the fly and mosquito season is at its height. The flies seem to come from everywhere and go everywhere. They fall into the boiling-pot; they crawl over the butter; they make their toilet on the vegetable dish; they take their bath in the milk; they rest on the edge of the drinking cup; they are the worst nuisance of the entire summer season. Worst of all, they carry the germs of many diseases, and play a great part in the spread of typhoid fever and probably tuberculosis.

The only good fly is a dead fly; the best fly is the fly that never was born. No man can absolutely prevent the breeding of flies, but every man who will take the trouble can greatly reduce their breeding. Animal and vegetable refuse is the nest of the fly. Bury this, cart it away, burn it, or otherwise keep it from the fly and you will greatly reduce the nuisance and danger of flies.

To keep flies from the house, screen the windows and doors and kill the flies that find entrance. If you do not want to buy fly-paper, make it yourself by boiling two pounds of resin in one pint of castor oil until dissolved; spread this on heavy paper and use as needed.

Mosquitoes, unlike flies, breed only in stagnant water, but they are as great a nuisance as flies in some localities and, in addition, spread malaria. If you keep water from standing around the premises, if you drain or fill pools of stagnant water, if your cistern or rain barrel is mosquito proof, if you will not permit old cans and bottles around the premises to catch rain water, you will have little trouble with mosquitoes.

Write for the Health Department pamphlets on "Insect Carriers of Disease." They are free.

7th month.

July.

31 days.

D. of mo.	D. of wk.	IMPORTANT DATES IN KANSAS HISTORY.	Sun.		Moon rises.
			Rises.	Sets.	
1	Mo	J. M. Armstrong opens first free school, 1844.	4 11	7 25	9 28
2	Tu	Legislature met at Pawnee, 1855.	4 11	7 25	9 50
3	We	Patriotism does not consist of noise!	4 12	7 25	10 13
4	Th	First celebrated in Kansas by Lewis and Clark, 1804.	4 12	7 25	10 38
5	Fri	Send for tetanus antitoxin.	4 13	7 24	10 51
6	Sat	Take antityphoid inoculation.	4 14	7 24	11 10
7	Su	A. J. Reeder, first governor of Kansas territory, 1854.	4 14	7 24	11 30
8	Mo	M. DeBourmont began explorations in Kansas, 1724.	4 15	7 23	11 52
9	Tu	Kansas Aid Committee met at Buffalo, N. Y., 1856.	4 16	7 23	morn
10	We	First enlistments for Colored Kansas battery, 1864.	4 16	7 23	0 19
11	Th	Eat lightly and drink cool water in hot weather.	4 17	7 22	0 54
12	Fri	Humboldt sacked by rebels; burned October 16, 1861.	4 18	7 22	1 40
13	Sat	The city dump is a city disgrace.	4 19	7 21	2 40
14	Su	F. S. & W. railroad completed to Wichita, 1883.	4 20	7 20	sets
15	Mo	Third Kansas regiment organized, 1861.	4 20	7 20	8 42
16	Tu	Grant, Sherman and Sheridan met at Leavenworth, 1861.	4 21	7 19	9 14
17	We	Petroleum in Miami and Bourbon counties, 1865.	4 22	7 18	9 40
18	Th	First overland coach arrives from the Pacific, 1861.	4 23	7 18	10 2
19	Fri	E. G. Ross appointed U. S. Sen. by Gov. Crawford, 1866.	4 24	7 17	10 23
20	Sat	Keep your head cool and your heart warm.	4 25	7 16	10 45
21	Su	Mrs. James H. Lane died; burial Lawrence, July 24, 1833.	4 26	7 16	11 9
22	Mo	Ex-Governor Osborn minister to Chili, 1881.	4 26	7 15	11 36
23	Tu	Patronise the clean grocer.	4 27	7 14	morn
24	We	First Kansas battery organized, 1861.	4 28	7 13	0 8
25	Th	Peace with the Cheyennes and Arapahoos concluded, 1825.	4 29	7 12	0 47
26	Fri	Wm. Walker appointed provisional governor, 1853.	4 30	7 11	1 34
27	Sat	"Smuggler," a Kansas horse, makes mile in 2: 16½, 1876.	4 31	7 10	2 29
28	Su	Emigrant Aid settlers arrive at mouth of Kaw, 1854.	4 32	7 9	rises
29	Mo	Wyandotte const. adopted, 1859. Kansas made a state, 1861.	4 3	7 8	7 54
30	Tu	The manure heap is the season's greatest danger.	4 34	7 7	8 17
31	We	U. S. senate confirms J. W. Geary as ter. governor, 1856.	4 35	7 6	8 38

MOON'S PHASES.

- ☾ Last Quarter, 7th day, 11 h. 47 m., morning.
- New Moon, 14th day, 8 h. 13 m., morning.
- ☽ First Quarter, 21st day, 0 h. 18 m., morning.
- ☾ Full Moon, 28th day, 11 h. 28 m., evening.

For the sixth season we remark—*Swat the fly.*
 A fly in the milk often means a member of the family in the grave.
 Wire screens in the windows may keep crape from the door.
 Keep flies from the house and you will help keep the doctor from the gate.
 The wise mother screens the baby's cradle, and wears a smile; the foolish mother does not, and may wear mourning.
 Flies in the dining-room precede nurses in the sick-room.
 A rain-barrel full of water—a house full of mosquitoes.

August for Typhoid Fever.

This is typhoid time. Every summer typhoid fever appears in many counties of Kansas, and before the end of the summer about 4500 people have the disease, and 401 of them die of it.

Typhoid fever is caused, like many other diseases, by a small germ which gets into the mouth from our fingers or on something we eat or drink, and which grows in the body and causes the disease.

1. To prevent typhoid fever at home get the well in shape. A good well must have a sound, tight top and a pump or an automatic bucket. A well with a leaky top or holes around the sides, or with a bucket which is touched with dirty hands and then goes into the well, is likely to give rise to typhoid fever.

2. Get the closet in shape. The discharge from human beings constitutes the most dangerous material on the farm in the summer time. It should be cared for as carefully as if it were a deadly poison. A good closet is the most important thing on the farm in the summer. A good closet should keep the material dry, off the ground, away from flies, and should be cleaned as often as necessary. The material should be carried away and buried.

3. Flies carry typhoid fever germs on their feet. They are dirty and filthy insects and spread diseases. Screen them out of the kitchen, catch or kill those that get in, and keep them away from the food, especially the milk.

To avoid typhoid fever yourself: *First*, wash the hands before eating anything, and do not put them into the mouth. *Second*, do not drink any water that you do not know comes from a good well, unless it has been boiled just before drinking. *Third*, do not drink milk, unless you know where it comes from, and know that it has been carefully looked after in a place where there is no typhoid fever. *Fourth*, if you are in a strange place, do not eat anything unless it has recently been boiled or otherwise heated through and through.

The State Board of Health will send you their pamphlet on "Typhoid Fever" for the asking.

8th month.

August.

31 days.

D. of mo.	D. of wk.	IMPORTANT DATES IN KANSAS HISTORY.	Sun.		Moon rises.
			Rises.	Sets.	
1	Th	Massachusetts Emigrant Aid party to Kansas, 1854.	4 36	7 5	8 57
2	Fri	Col. N. S. Goss gives ornithological collection, 1882.	4 37	7 4	9 14
3	Sat	Maj. Ogden and 15 others died of cholera, Fort Riley, 1855.	4 38	7 2	9 34
4	Su	Forget not the cat when house is closed for the summer.	4 39	7 1	9 55
5	Mo	Free State men take a fort at Osawatomie, 1856.	4 40	7 0	10 19
6	Tu	A good housekeeper's house is free from flies.	4 41	6 59	10 49
7	We	General Miles organizes expedition against Indians, 1874.	4 42	6 57	11 29
8	Th	Legislature selects Lecompton as capitol of territory, 1855.	4 43	6 56	morn
9	Fri	Teach the children to swim.	4 45	6 55	0 20
10	Sat	Battle of Wilson's creek, Missouri, Kansas took part, 1861.	4 46	6 53	1 27
11	Su	Fight the mosquito by destroying its breeding place.	4 47	6 52	2 45
12	Mo	Murder of Hopps, free-state, by Pugit, pro-slavery, 1856.	4 48	6 51	sets
13	Tu	Governor Harvey receives Price raid money, 1872.	4 49	6 49	7 38
14	We	Free-state convention assembled at Lawrence, 1855.	4 50	6 48	8 3
15	Th	S. C. Pomeroy sends message over new telegraph line, 1859.	4 51	6 46	8 25
16	Fri	Lawrence men capture Fort Titus and twenty men, 1856.	4 52	6 45	8 47
17	Sat	Death of ex-Gov. Chas. Robinson, Lawrence, 1894.	4 53	6 43	9 11
18	Su	General Sully pursues Indians in Solomon valley, 1868.	4 54	6 42	9 37
19	Mo	Murder of Hopps, free-state, by Pugit, pro-slavery, 1856.	4 55	6 40	10 8
20	Tu	Gen. Sheridan ordered to Kansas, 1867.	4 56	6 39	10 45
21	We	Isaac McCoy starts from St. Louis to explore Kansas, 1828.	4 57	6 37	11 30
22	Th	Quantrill raid on Lawrence; 143 killed, 30 wounded; 1863.	4 58	6 36	morn
23	Fri	John Brown leaves Chicago for Kansas, 1855.	4 59	6 34	0 22
24	Sat	Martin and Crawford Centennial commissioners, 1871.	5 1	6 33	1 22
25	Su	Governor Shannon declares territory in insurrection, 1856.	5 2	6 31	2 25
26	Mo	John Calhoun appointed surveyor general of Kansas, 1854.	5 3	6 29	3 30
27	Tu	New Orleans favors making Kansas a slave state, 1856.	5 4	6 28	rises
28	We	Eighth Kansas infantry organization begun, 1861.	5 5	6 26	7 3
29	Th	Susan B. Anthony starts for Kansas, 1867.	5 6	6 24	7 21
30	Fri	Battle of Osawatomie, 1856. John Brown monument, 1877.	5 7	6 23	7 40
31	Sat	Get the children ready for school.	5 8	6 21	8 0

MOON'S PHASES.

- ☾ Last Quarter, 5th day, 11 h. 8 m., evening.
- New Moon, 12th day, 2 h. 58 m., evening.
- ☽ First Quarter, 19th day, 11 h. 57 m., morning.
- ☾ Full Moon, 27th day, 2 h. 59 m., evening.

If some people were as much afraid of flies as they are of bad water, there would be less typhoid.

Good water is more to be prized than rubies, and clean hands are better than much fine gold.

The fly has small feet, but a million typhoid germs can ride comfortably on one of them.

If you nurse a typhoid case, wash your hands and watch your mouth.

A sanitary privy costs ten dollars; a case of typhoid costs a hundred. You will seldom have both.

The season's best fashion is to be rendered immune against typhoid fever by "antityphoid" inoculation.

September for Diphtheria.

Every September cases of diphtheria begin to appear, and by October the disease is near its height. Diphtheria is caused by a small germ which gets into the throat, grows and multiplies there, and produces a poison which gives rise to the symptoms of the disease. These germs may remain in the throats of persons who have the disease for some weeks after all other signs of the disease have disappeared. Such persons are dangerous during this time.

To keep your children from having diphtheria:

1. Give each child a drinking cup to take to school, and teach him never to drink from a cup which is used by others.
2. Teach the child not to use trifles, such as pencils, toys, and the like, which have been put into the mouths of other children.
3. Keep your children at home when there is diphtheria in the neighborhood. Do not let them kiss other children, and above all do not let them play with children from homes where there is diphtheria or with children who have sore throats, whether it is diphtheria or not.
4. See that your health officer quarantines all cases of diphtheria promptly and keeps the children in the family where there is diphtheria from coming into the streets or mingling with other children.

DIPHTHERIA ANTITOXIN.

The most perfect and certain remedy which has ever been devised by medical science is diphtheria antitoxin. It destroys absolutely the poison generated by the diphtheria germ. It does not injure the heart. Children with diphtheria frequently die of heart disease because the poison of diphtheria attacks the heart early in the disease. Diphtheria antitoxin does not attack the heart, but destroys this poison, and if given early enough prevents the heart from being damaged.

If your child has diphtheria, or if you think it has diphtheria and the doctor is not sure, have him give antitoxin at once. One small dose of antitoxin early in the disease will cure in almost all cases, but if you wait three or four days even the largest doses may not do any good.

9th month.

September.

30 days.

D. of mo.	D. of wk.	IMPORTANT DATES IN KANSAS HISTORY.	Sun.		Moon rises.
			Rises.	Sets.	
1	Su	William Phillips killed at Leavenworth, 1856.	5 19	6 19	8 22
2	Mo	Battle of Dry Wood, 1861. Labor day.	5 10	6 18	8 49
3	Tu	Platte river bridge massacre, Missouri, 1861.	5 11	6 18	9 24
4	We	The oyster season; they are unwatered in Kansas.	5 12	6 14	10 9
5	Th	Free State convention and Free State party organized, 1855.	5 13	6 13	11 8
6	Fr	Fort Zarah established, 1864.	5 14	6 11	morn
7	Sat	Commissions to officers of Arapahoe county, 1855.	5 15	6 9	0 19
8	Su	Rich discoveries of lead near Baxter Springs, 1873.	5 16	6 7	1 39
9	Mo	Sixth Kansas organized at Fort Scott, 1861.	5 17	6 6	3 2
10	Tu	Second Kansas battery organization begun, 1862.	5 19	6 4	sets
11	We	First successful Topeka bi-plane, by A. K. Longren, 1911.	5 20	6 2	6 26
12	Th	State University dedicated, 1866.	5 21	6 0	6 48
13	Fri	Battle of Hickory Point, 1856.	5 22	5 59	7 11
14	Sat	Gov. Crawford calls for troops for Indian warfare, 1868.	5 23	5 57	7 36
15	Su	First Kansas paper published, Leavenworth <i>Herald</i> , 1854.	5 24	5 55	8 5
16	Mo	Third Indian regiment organized, 1862.	5 25	5 53	8 41
17	Tu	Battle of Arickaree, 51 scouts vs. 500 Indians, 1868.	5 26	5 52	9 23
18	We	Legal hanging at Seneca, 1868.	5 27	5 50	10 14
19	Th	D. M. Boone, appointed farmer for Kansas Indians, 1827.	5 28	5 48	11 12
20	Fri	John Brown song first sung at Leavenworth, 1861.	5 29	5 46	morn
21	Sat	The best guide to dress is the weather.	5 30	5 45	0 15
22	Su	Financial panic, 1873.	5 31	5 43	1 19
23	Mo	First day of autumn.	5 32	5 41	2 23
24	Tu	Delaware Indians given land in France, 1828.	5 33	5 39	3 27
25	We	Twelfth Kansas infantry mustered in at Paola, 1862.	5 35	5 37	4 30
26	Th	Leavenworth chosen site for National Military Home, 1884.	5 36	5 36	rises
27	Fri	Pres. Taft lays corner stone of Memorial Building, 1911.	5 37	5 34	6 5
28	Sat	William H. Seward given reception at Atchison, 1860.	5 38	5 32	6 27
29	Su	Lieut. Z. M. Pike raises U. S. flag at Pawnee, 1806.	5 39	5 30	6 53
30	Mo	Cheyenne Indian massacre, Decatur county, 1878.	5 40	5 29	7 25

MOON'S PHASES.

- ☾ Last Quarter, 4th day, 8 h. 23 m., morning.
- New Moon, 10th day, 10 h. 48 m., evening.
- ☽ First Quarter, 18th day, 2 h. 55 m., morning.
- ☾ Full Moon, 26th day, 6 h. 34 m., morning.

Giving antitoxin is as certain in its results as pouring water on a fire, and it is just as important to do it early.

A syringe of antitoxin is more efficacious in a case of diphtheria than a month of nursing.

The rusty tin cup and the wooden bucket in the schoolroom are convenient, but they are dangerous.

A drinking cup for the school child costs five cents; it often saves you from a case of diphtheria.

It is to the glory of Kansas that she was first to abolish the public drinking cup in schools, railroads and hotels.

October for Scarlet Fever.

Scarlet fever is a most dangerous and peculiar disease, about which our knowledge is far from complete. It is spread from one person to another most probably by the discharges from the nose and throat of a case, and possibly by the scales from the skin of a child recovering from the disease.

The prominent symptoms of scarlet fever are:

Fever, sore throat, vomiting and a peculiar red rash on the skin. Where scarlet fever is prevailing, many children have the disease who have no symptoms except the sore throat and a slight fever. These are very apt to spread the disease, as they are not recognized as having scarlet fever.

To protect children from scarlet fever:

1. Do not let them use a common drinking cup anywhere at any time. Carry a cup or glass of your own when you are traveling. Make the child carry a cup to school, if the school is not provided with a sanitary drinking fountain.

2. Try to teach the child not to kiss other children on the mouth, and not to put pencils, toys and the like into the mouth.

3. Keep your children at home when there is scarlet fever in the neighborhood, and do not let them play at any time with children from houses where there is scarlet fever or with children who have sore throats or have recently had sore throats. If your child has a sore throat and a rash on the body, put him in a separate room away from the other children until the doctor comes and decides what the trouble is. Keep the children with sore throats away from the other children as far as possible. If your child has scarlet fever in spite of these precautions, obey exactly what the doctor says about keeping the child in bed and about quarantine.

When in doubt, ask your doctor.

Write for the Health Department Bulletin on "Scarlet Fever."

10th month. **October.** 31 days.

D. of mo.	D. of wk.	IMPORTANT DATES IN KANSAS HISTORY.	Sun.		Moon rises.
			Rises.	Sets.	
1	Tu	Spain cedes Louisiana to France, 1800.	5 41	5 27	8 6
2	We	General Curtis receives news of Price's raid, 1864.	5 42	5 25	8 59
3	Th	S. D. Lecompte, first chief justice of Kansas Ter., 1854.	5 43	5 23	10 5
4	Fri	Kan. Asso. for Study and Prevention of Tuberculosis, 1908.	5 44	5 22	11 20
5	Sat	Mother Hayden arrives Osage Mission, 1847.	5 45	5 20	morn
6	Su	First state fair held at Leavenworth, 1863.	5 47	5 18	0 39
7	Mo	Kansas wagon gets first medal Centennial Exposition, 1876.	5 48	5 17	1 59
8	Tu	Militia called out to repel Price's invasion, 1864.	5 49	5 15	3 18
9	We	Rev. Simmerwell started mission for Pottawatomies, 1833.	5 50	5 13	4 34
10	Th	Washington Irving at Fort Gibson, Indian Territory, 1852.	5 51	5 12	sets
11	Fri	Gov. Crawford called for troops, Nineteenth Kansas, 1868.	5 52	5 10	5 35
12	Sat	P. B. Plumb born, 1837; U. S. senator 1877-1891.	5 53	5 8	6 3
13	Su	Indians in Solomon valley, 4 killed, 2 captured, 1868.	5 55	5 7	6 36
14	Mo	Treaty with Arapahoes and Cheyennes, 1865.	5 56	5 5	7 16
15	Tu	Kansas Tribune issued by Speer Bros., at Lawrence, 1854.	5 57	5 3	8 4
16	We	Custer leaves Leavenworth to command Fort Riley, 1866.	5 58	5 2	9 0
17	Th	Corner stone of state capitol, Topeka, laid, 1866.	5 59	5 0	10 2
18	Fri	Gen. Sherman at Leavenworth, public reception, 1865.	6 0	4 59	11 5
19	Sat	Look to your fuel supply.	6 2	4 57	morn
20	Su	Terrible prairie fire in Butler county, 1872.	6 3	4 56	0 10
21	Mo	Kansas Herald of Freedom, by O. W. Brown & Co., 1854.	6 4	4 54	1 14
22	Tu	Battle of the Blue, 1864.	6 5	4 53	2 17
23	We	Topeka constitutional convention meets, 1855.	6 6	4 51	3 21
24	Th	Kickapoes receive lands in eastern Kansas, 1832.	6 8	4 50	4 26
25	Fri	Cool weather does not call for closed windows.	6 9	4 48	rises
26	Sat	Monument to Father Padilla dedicated at Herington, 1904.	6 10	4 47	4 56
27	Su	Theodore Roosevelt born, 1858.	6 11	4 45	5 28
28	Mo	Arapahoe and Cheyenne Indians located in Ind. Ter., 1867.	6 12	4 44	6 5
29	Tu	Gov. Walker threatened account election proceedings, 1857.	6 14	4 42	6 55
30	We	Settlers driven from Mine Creek, Linn county, 1861.	6 15	4 41	7 57
31	Th	Pres. Johnson accepts 40 miles of Kan. Pac. Rld., 1865.	6 16	4 40	9 9

MOON'S PHASES.

- ☾ Last Quarter, 3d day, 3 h. 48 m., evening.
- New Moon, 10th day, 8 h. 41 m., morning.
- ☽ First Quarter, 17th day, 9 h. 6 m., evening.
- ☾ Full Moon, 25th day, 9 h. 30 m., evening.

Scarlatina may not sound as dangerous as scarlet fever; but ask the undertaker.

It is sometimes difficult to protect a child from scarlet fever, but it is easier than to see a child made deaf for life.

If the child shows the rash of scarlet fever, do not persuade yourself it has chickenpox. Send for the doctor.

A neighbor may send your baby a basket of toys; but if there has been scarlet fever in that family, put the basket and its contents in the fire.

November for Colds and Influenza.

The changing weather and chill winds of November bring a crop of colds all over Kansas. Few are exempt; some suffer for a few days; some are unwell for weeks; some contract permanent lung troubles and bronchitis. Comparatively few colds lead to consumption, but as every cold weakens the system and makes the person more liable to other diseases, and particularly to consumption, every cold should be closely watched.

There is no infallible rule by which colds can be prevented, and there is no law by which everyone can protect himself from the germs which cause influenza. Common sense is the best protection. A little forethought is the best ally of common sense.

Draughts, over-heated unventilated rooms, unsuitable clothing and senseless exposure are the chief causes of colds. Care for these things greatly reduces the danger of colds. The man who sits in a draught, for instance, and exposes one part of his body in this way, may expect a cold. On the other hand, the man who is so much afraid of draughts that he lives in a close or stuffy room, may expect to contract a cold when he goes into the open air. The open window, which does not create a draught, is the secret of proper precaution. Never stay in a close room, but never so ventilate a room that you create a draught where you are sitting.

Unsuitable clothing is also to be avoided. The man who puts on his flannels in November and resolves not to take them off, except for a change, until the spring, unconsciously determines that he will have colds. Regulate your clothing according to the weather; in warm spells, reduce your clothing; in cold snaps, increase it. When you leave a heated room to go into the open air, protect your body by additional clothing; or, if you do not care to wear an overcoat, reduce your clothing when you enter a warm place. A little foresight is better than a spell of sickness.

11th month.

November.

30 days.

D. of mo.	D. of wk.	IMPORTANT DATES IN KANSAS HISTORY.	Sun.		Moon rises.
			Rises.	Sets.	
1	Fri	Natural gas for manufacturing first used at Iola, 1896.	6 17	4 39	10 26
2	Sat	Twentieth Kansas regt. returns from Philippines, 1899.	6 19	4 37	11 45
3	Su	U. P. Rld. Co., Southern branch, organized Emporia, 1866.	6 20	4 36	morn
4	Mo	Gov. Crawford resigns to command 19th Kan. cav., 1868.	6 21	4 35	1 1
5	Tu	First paper in Ellis county, Hays City <i>Advances</i> , 1867.	6 22	4 34	2 16
6	We	The cost of food bears no relation to its nutritive value.	6 24	4 32	3 30
7	Th	Treaty locating Shawnees in eastern Kansas, 1825.	6 25	4 31	4 44
8	Fri	L. D. Lewelling, "first People's party gov.," elected, 1892.	6 26	4 30	sets
9	Sat	Not what you eat but what you digest nourishes you.	6 27	4 29	4 32
10	Su	Proclamation for election of delegates to Congress, 1854.	6 29	4 28	5 9
11	Mo	Geary says "Peace prevails throughout the territory," 1856.	6 30	4 27	5 54
12	Tu	Miss Clough, of Leav., first woman notary in Kansas, 1871.	6 31	4 26	6 47
13	We	One-third of the sickness and deaths are preventable.	6 32	4 15	7 48
14	Th	Organization of Law and Order party, Leavenworth, 1855.	6 34	4 24	8 51
15	Fri	Telegraph completed to Topeka, 1865.	6 35	4 23	9 56
16	Sat	Humboldt's first paper started by Joseph Bond, 1864.	6 36	4 22	11 0
17	Su	First Kansas aeroplane, trial by H. L. Call, Pittsburg, 1908.	6 37	4 21	morn
18	Mo	The lure of the red light is a decoy for the red plague.	6 39	4 20	0 3
19	Tu	Samuel Medary appointed governor of Kansas Ter., 1858.	6 40	4 20	1 6
20	We	First Thanksgiving day in Kansas, 1856.	6 41	4 19	2 9
21	Th	Uncemented cesspools menace of underground waters.	6 42	4 18	3 14
22	Fri	Railroad celebration at Humboldt, 1870.	6 44	4 18	4 22
23	Sat	First report of vital statistics issued, 1911.	6 45	4 17	5 35
24	Su	Executive offices removed to Shawnee Mission, 1854.	6 46	4 16	rises.
25	Mo	First street railway in operation at Lawrence, 1871.	6 47	4 16	4 47
26	Tu	Delaware Baptist mission located by Doctor Lykins, 1832.	6 48	4 15	5 47
27	We	Custer defeats Cheyennes on the Washita, 1868.	6 49	4 15	6 58
28	Th	First excursion, Kan. Pac., Wyandotte to Lawrence, 1864.	6 50	4 14	8 16
29	Fri	First election of delegates to Congress, 1854.	6 52	4 14	9 35
30	Sat	Battle of Franklin, Tenn., Eighth Kan. participated, 1864.	6 53	4 14	10 52

MOON'S PHASES.

- ☾ Last Quarter, 1st day, 10 h. 38 m., evening.
- New Moon, 8th day, 9 h. 5 m., evening.
- ☽ First Quarter, 16th day, 5 h. 43 m., evening.
- ☾ Full Moon, 24th day, 11 h. 12 m., morning.

A light overcoat is better than a heavy cold.
 Many a cough ends in a coffin.
 A stuffy room is the germ's best ally.
 A little ventilation is more effective than much quinine.
 There never was so cold a day but that a little fresh air was healthful.
 "Catching cold" is an accurate expression, because most colds are
 "catching," or contagious.

December for Consumption.

December is the worst month for contracting consumption, the "Great White Plague."

This disease is caused by a minute germ which is familiar to all scientists. This germ gets into the body and settles in the lungs and grows, and by its growth destroys the lungs very rapidly. The sputum of the consumptive is filled with these little germs, and if these germs get into other people's bodies they are apt to give them consumption.

Consumption is spread about by careless spitting, kissing, by fingers soiled with the germs from the mouth, by common drinking cups, and the like.

If you have consumption, do not give it to others. Do not spit on floors, sidewalks, street cars, elevators or public places. Spit into a special sputum cup, or napkin that can be burned. Hold a handkerchief, better a paper, one that may be burned, before the face when coughing. Do not kiss anyone, do not use a public drinking cup or glass, and if the fingers are soiled with your sputum wash them thoroughly with soap and water at once. Remember that if you are careless you may give your terrible disease to others.

If you have not consumption, do not get it. Do not work or live in a place where people spit on the floor. Do not use a public drinking glass. Do not kiss people who may have consumption. Do not put the fingers into the mouth for any purpose. Wash the hands always before eating. Do not spit on the floor yourself; do not let others do it. Keep in good health by avoiding excesses, eating sensibly, and most important of all, by getting plenty of fresh air. Do not work in a room where there is no fresh air. Do not live in a room where there is no fresh air. Do not sleep in a room where there is no fresh air.

The State Department of Health publishes bulletins which give full information of the cause and treatment of consumption. They will send, free of cost, these bulletins, to any citizen who will send his name and address to the office in Topeka.

12th month.

December.

31 days.

D. of mo.	D. of wk.	IMPORTANT DATES IN KANSAS HISTORY.	Sun.		Moon rises.
			Rises.	Sets.	
1	Su	Abraham Lincoln speaks at Elwood, 1859.	6 54	4 13	morn
2	Mo	John Brown hung at Charlestown, Va., 1859.	6 55	4 15	0 6
3	Tu	Lawrence besieged by Missourians, 1855.	6 56	4 13	1 19
4	We	David J. Brewer, associate justice U. S. sup. ct., 1889.	6 57	4 12	2 31
5	Th	Topeka founded by C. K. Holliday and others, 1854.	6 58	4 12	3 43
6	Fri	Geo. W. Martin secretary State Historical Society, 1899.	6 59	4 12	4 55
7	Sat	First Free State legislature met at Leecompton, 1857.	7 0	4 12	6 7
8	Su	Mrs. E. P. Allerton publishes "Walls of Corn," 1833.	7 1	4 12	sets
9	Mo	Gov. Shannon orders pro-slavery forces to disband, 1855.	7 2	4 12	4 36
10	Tu	Capitol building, 427-429 Kansas ave., used 1863 to 1869.	7 2	4 12	5 35
11	We	J. W. Robinson, first secretary of state, died, 1863.	7 3	4 12	6 39
12	Th	This is an age of baths and not of perfumes.	7 4	4 12	7 42
13	Fri	Is it the odor of sanctity in the unventilated church?	7 5	4 12	8 46
14	Sat	Third Kansas captures Butler and Papinsville, Mo., 1861.	7 6	4 13	9 50
15	Su	Pro-slavery men destroy paper at Leavenworth, 1855.	7 6	4 13	10 52
16	Mo	Kansas wheat first prize at Omaha Corn Expo., 1908.	7 7	4 13	11 54
17	Tu	Bill to establish Kansas and Nebraska territories, 1844.	7 8	4 13	morn
18	We	Gov. Medary assumed duties as governor of Kan. Ter., 1858.	7 8	4 14	0 57
19	Th	Heredity plays but second fiddle in tuberculosis.	7 9	4 14	2 2
20	Fri	Battle of the Spurs, Jackson county, 1858.	7 10	4 14	3 11
21	Sat	Great meteor passes over Kansas, 1876.	7 10	4 15	4 24
22	Su	Lawrence convention nominates state officers, 1855.	7 11	4 15	5 40
23	Mo	Free-state meeting at Lawrence, 1854.	7 11	4 16	rises
24	Tu	Cass promulgates squatter sovereignty dogma, 1847.	7 12	4 17	4 37
25	We	East wing of capitol occupied by state officers, 1869.	7 12	4 17	5 56
26	Th	A laugh is worth a hundred groans on any market.	7 12	4 18	7 18
27	Fr	T. N. Stinson commissioned as treasurer Kan. Ter., 1855.	7 13	4 19	8 39
28	Sat	Governor Medary asks military aid, 1858.	7 1	4 19	9 56
29	Su	Lawrence dam completed and used, cost \$100,000, 1874.	7 13	4 20	11 8
30	Mo	Osage Indians locate on the Neosho river, 1825.	7 13	4 21	morn
31	Tu	Law abolishing slavery in Kansas unconstitutional, 1860.	7 14	4 22	0 22

MOON'S PHASES.

- ☾ Last Quarter, 1st day, 6 h. 5 m., morning.
- New Moon, 8th day, 0 h. 7 m., evening.
- ☽ First Quarter, 16th day, 3 h. 6 m., evening.
- ☾ Full Moon, 23d day, 11 h. 30 m., evening.
- ☾ Last Quarter, 30th day, 3 h. 12 m., evening.

A careless spitter with a little cough is worse than a careless man with a big revolver.

It is difficult to cure consumption; it is easy to prevent it.

Open your windows for the fresh air and you will seldom have to open your pocketbook for the druggist.

It is better to sleep in the fresh air than in the fresh grave.

Sow the seed of consumption and you reap the fruits of death.

You may have consumption and not know it. The doctor will.

Avoid consumption "cures." They never cure.

VITAL STATISTICS

Reported to the Kansas Board of Health for November, 1911.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
The State.. totals, November, 1910...	212	15	147	6	153	9	171	5	210	2	18	0
	260	53	224	27	176	16	423	4	211	1	21	0
Allen	1	1	0	0	3	1	3	1	9	0	0	0
Anderson	0	0	0	0	0	0	0	0	5	0	0	0
Atchison	0	0	0	0	0	0	0	0	0	0	0	0
Barber	0	0	0	0	0	0	0	0	0	0	0	0
Barton	2	0	1	0	0	0	1	1	0	0	0	0
Bourbon	0	0	0	0	2	0	0	0	4	0	0	0
Brown	0	0	0	0	6	0	0	0	0	0	0	0
Butler	0	0	0	0	0	0	0	0	0	0	0	0
Chase	0	0	0	0	0	0	0	0	0	0	0	0
Chautauque	0	0	0	0	0	0	0	0	0	0	0	0
Cherokee	0	0	1	0	0	0	0	0	0	0	0	0
Cherokee	0	0	2	0	0	0	0	0	0	0	0	0
Cherokee	0	0	0	0	0	0	0	0	0	0	0	0
Clark	0	0	0	0	0	0	0	0	0	0	0	0
Clark	1	0	0	0	0	0	0	0	0	0	0	0
Clay	0	0	0	0	0	0	0	0	0	0	0	0
Coffey	0	0	0	0	0	0	0	0	0	0	0	0
Coffey	0	0	0	0	0	0	0	0	0	0	0	0
Comanche	0	0	0	0	0	0	0	0	0	0	0	0
Cowley	1	0	0	0	1	0	4	0	12	0	1	0
Crawford	1	0	0	0	4	0	3	0	0	0	0	0
Decatur	0	0	0	0	0	0	0	0	0	0	0	0
Dickinson	0	0	0	0	3	0	3	1	0	0	0	0
Dickinson	0	0	2	0	3	0	2	0	7	0	0	0
Douglas	0	0	1	0	0	0	0	0	0	0	1	0
Douglas	0	0	1	0	1	0	0	0	0	0	0	0
Edwards	0	0	0	0	0	0	2	2	0	0	0	0
Ellis	1	0	0	0	0	0	0	0	0	0	0	0
Ellis	0	0	0	0	0	0	0	0	0	0	0	0
Ellsworth	1	1	0	0	0	0	0	0	0	0	0	0
Finnney	0	0	0	0	0	0	0	0	0	0	0	0
Ford	0	0	2	0	6	1	3	0	0	0	0	0
Ford	0	0	4	1	1	0	0	0	0	0	0	0
Franklin	0	0	0	0	0	0	0	0	0	0	0	0
Gary	0	0	0	0	0	0	0	0	0	0	0	0
Gove	0	0	0	0	0	0	0	0	0	0	0	0
Graham	0	0	0	0	0	0	0	0	0	0	0	0
Grant	0	0	0	0	0	0	0	0	0	0	0	0
Grant	0	0	0	0	0	0	1	0	0	0	0	0
Gray	0	0	0	0	0	0	0	0	0	0	0	0
Greene	0	0	0	0	0	0	0	0	0	0	0	0
Greenwood	1	0	7	2	1	0	8	0	0	0	0	0
Hamilton	0	0	1	0	0	0	1	0	0	0	0	0
Hamilton	0	0	2	0	0	0	0	0	0	0	0	0
Harper	0	0	0	0	0	0	1	0	1	0	0	0
Harvey	0	0	0	0	0	0	0	0	0	0	0	0
Haskell	0	0	0	0	0	0	0	0	0	0	0	0
Hodgeman	0	0	0	0	0	0	0	0	0	0	0	0
Jackson	2	0	2	0	4	0	1	0	0	0	0	0
Jefferson	0	0	0	0	4	0	0	0	1	0	0	0
Jewell	0	0	1	0	0	0	0	0	2	0	0	0
Johnson	0	0	5	0	0	0	0	0	0	0	2	0
Johnson	0	0	2	1	0	0	0	0	0	0	0	0
Kearny	0	0	0	0	0	0	0	0	0	0	0	0
Kingman	0	0	0	0	0	0	0	0	0	0	0	0
Kiowa	0	0	0	0	0	0	0	0	0	0	0	0
Labette	0	0	0	0	2	0	6	0	0	0	0	0
Lane	0	0	0	0	0	0	0	0	0	0	0	0
Lane	1	0	1	0	2	0	1	0	0	0	0	0
Leavenworth	0	0	0	0	0	0	0	0	0	0	0	0
Lincoln	0	0	0	0	0	0	0	0	0	0	0	0
Linn	0	0	1	0	0	0	0	0	0	0	0	0
Logan	0	0	2	0	0	0	1	0	1	0	0	0
Lyon	0	0	1	0	0	0	0	0	0	0	0	0
Marion	0	0	0	0	0	0	0	0	0	0	0	0
Marion	0	0	2	0	1	0	2	0	0	0	0	0
McPherson	0	0	6	0	2	0	0	0	0	0	0	0

CONTAGIOUS AND INFECTIOUS DISEASES - Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases ...	Deaths	Cases ...	Deaths	Cases ...	Deaths	Cases ...	Deaths	Cases ...	Deaths	Cases ...	Deaths
Meade.....	0	0	0	0	0	0	0	0	0	0	0	0
Miami.....	0	0	0	0	3	1	3	0	0	0	0	0
Mitchell.....	0	0	1	0	0	0	2	0	0	0	0	0
Montgomery.....	2	2	6	0	5	0	2	0	0	0	1	0
Morris.....	0	0	1	0	1	0	10	1	0	0	0	0
Morton.....	0	0	0	0	0	0	0	0	0	0	0	0
Nemaha.....												
Nesaho.....	1	0	1	0	1	0	0	0	0	0	1	0
Ness.....	0	0	0	0	3	0	0	0	0	0	0	0
Norton.....	1	1	1	0	0	0	2	0	0	0	0	0
Osage.....	2	2	0	0	0	0	11	0	0	0	0	0
Osborne.....	0	0	1	0	4	0	3	0	0	0	0	0
Ottawa.....	0	0	0	0	0	0	0	0	0	0	0	0
Pawnee.....	0	0	5	0	0	0	15	1	0	0	0	0
Phillips.....	0	0	0	0	0	0	0	0	0	0	0	0
Pottawatomie.....												
Pratt.....	0	0	12	0	1	0	15	0	0	0	1	0
Rawlins.....	0	0	0	0	0	0	0	0	0	0	0	0
Reno.....												
Republic.....	1	0	0	0	0	0	4	0	0	0	0	0
Rice.....	0	0	0	0	0	0	2	0	0	0	0	0
Riley.....	1	0	1	0	0	0	4	0	0	0	0	0
Rooks.....	1	1	1	0	0	0	0	0	0	0	0	0
Rush.....	2	2	0	0	4	0	4	0	0	0	0	0
Russell.....	0	0	1	0	0	0	0	0	0	0	0	0
Saline.....	0	0	2	0	2	0	0	0	0	0	0	0
Scott.....	0	0	0	0	0	0	1	0	0	0	0	0
Sedgwick.....	1	1	2	0	2	0	0	0	0	0	0	0
Seward.....	0	0	1	1	0	0	1	0	0	0	0	0
Shawnee.....												
Sheridan.....	0	0	0	0	0	0	0	0	0	0	0	0
Sherman.....	0	0	0	0	5	1	0	0	0	0	0	0
Smith.....	1	1	0	0	0	0	0	0	0	0	0	0
Stafford.....	0	0	2	0	0	2	0	0	0	0	0	0
Stanton.....												
Stevens.....												
Sumner.....	0	0	4	0	1	0	11	0	0	0	7	0
Thomas.....												
Trego.....	0	0	0	0	0	0	0	0	0	0	0	0
Wabaunsee.....												
Wallace.....												
Washington.....	1	1	2	0	0	0	0	0	0	0	0	0
Wichita.....	0	0	17	0	28	0	2	0	0	0	0	0
Wilson.....	0	0	8	0	10	0	6	0	0	0	0	0
Woodson.....	0	0	1	0	0	0	0	0	164	0	0	0
Wyandotta.....	0	0	0	0	0	0	0	0	0	0	0	0
Cities:												
Fort Scott.....	1	1	1	0	4	0	1	0	0	0	0	0
Atchison.....	3	0	6	0	1	0	0	0	0	0	0	0
Coffeyville.....	3	1	0	0	2	1	2	0	0	0	0	0
Kansas City.....	8	0	18	0	13	0	2	0	0	0	3	0
Leavenworth.....	4	0	2	0	1	0	1	0	0	0	0	0
Parsons.....	0	0	2	1	0	0	1	0	0	0	0	0
Pittsburg.....	0	0	0	0	3	0	7	0	0	0	0	0
Topeka.....	5	0	0	0	11	2	4	0	4	2	1	0
Wichita.....												
Hutchinson.....												
State Institutions.	148	0	0	0	0	0	0	0	0	0	0	0

* No report.

DEATHS AND BIRTHS IN KANSAS, Month of October, 1911.

DEATHS.

Stillbirths not included.			
Typhoid fever.....	85	Diseases of liver and adnexa.....	22
Smallpox.....	1	Peritonitis.....	13
Measles.....	0	Other diseases digestive system.....	32
Scarlet fever.....	0	Acute nephritis.....	14
Whooping cough.....	3	Bright's disease.....	79
Diphtheria.....	25	Other diseases genito-urinary system.....	18
Dysentery.....	12	The puerperal state.....	21
Tuberculosis, all forms.....	124	Diseases of the skin, etc.....	3
Cancer, all forms.....	98	Diseases of the bones, etc.....	5
Rheumatism, all forms.....	16	Malformations.....	9
Diabetes.....	11	Diseases of early infancy.....	129
Other general diseases.....	41	Old age.....	60
Meningitis.....	13	Suicides.....	29
Cerebral hemorrhage.....	79	Accidents.....	96
Paralysis.....	41	Homicides.....	8
Other diseases nervous system.....	45	Ill-defined diseases.....	34
Organic heart disease.....	132	Total deaths.....	1,550
Other diseases circulatory system.....	46		
Broncho-pneumonia.....	3	BIRTHS.	
Pneumonia.....	23	Males.....	1,253
Other diseases respiratory system.....	27	Females.....	1,140
Diarrhea and enteritis (under 2 years).....	107	White.....	2,395
Diarrhea and enteritis (2 years and over),	17	Colored.....	58
Appendicitis.....	15	Total births, 2,393.	
		Stillbirths, 79.	

AGES AT DATE OF DEATH.

<i>Ages.</i>	<i>No.</i>			<i>SEX.</i>
-1.....	284	Males.....	861	
1-2.....	63	Females.....	639	
3-5.....	32			<i>COLOR.</i>
6-10.....	42	White.....	1,451	
11-15.....	25	Indian.....	7	
16-20.....	61	Black.....	92	
21-25.....	60			<i>NATIONALITY.</i>
26-30.....	53	Native.....	1,292	
31-35.....	51	Foreign.....	220	
36-40.....	67	Unknown.....	38	
41-45.....	51			<i>SOCIAL CONDITION.</i>
46-50.....	72	Single.....	620	
51-60.....	144	Married.....	617	
61-70.....	156	Widowed.....	274	
71-80.....	234	Divorced.....	21	
81-90.....	111	Unknown.....	18	
91-100.....	11			
100+.....	1			
Unknown.....	3			
Total.....	1 550			

Chronological Eras and Cycles.

(From the American Ephemeris and Nautical Almanac, 1912.)

CHRONOLOGICAL ERAS.

The year 1912, which comprises the latter part of the 186th and the beginning of the 187th year of the Independence of the United States of America, corresponds to —

The year 6625 of the Julian Period:

- “ 7420-7421 of the Byzantine era, the year 7421 commencing on September 1;
- “ 5672-5673 of the Jewish era, the year 5673 commencing on September 23, or, more exactly, at sunset on September 22;
- “ 2665 since the foundation of Rome, according to Varro;
- “ 2659 since the beginning of the era of Nabonassar, which has been assigned to Wednesday, the 26th of February of the 3968th year of the Julian Period; corresponding, in the notation of chronologists, to the 748th, and, in the notation of astronomers, to the 747th year before the birth of Christ;
- “ 2688 of the Olympiads, or the fourth year of the 672d Olympiad, commencing in July, 1912, if we fix the era of the Olympiads at 775½ years before Christ, or near the beginning of July of the year 3939 of the Julian Period;
- “ 2224 of the Grecian era, or the era of the Seleucidæ, which began near the vernal equinox of the year, - 311 = B. C. 312, = 4408 of the Julian Period;
- “ 1628 of the era of Diocletian;
- “ 2572 of the Japanese era and to the 45th year of the period entitled “Meiji.”

The year 1330 of the Mohammedan era, or the era of the Hegira, begins on the 2d day of January, 1912, and the year 1331 begins on the 22d day of December, 1912.

The first day of January of the year 1912 is the 2,419,039th day since the commencement of the Julian Period.

CHRONOLOGICAL CYCLES.

Dominical Letters	G, F	Solar Cycle	17
Epact	11	Roman Indiction	10
Lunar Cycle or Golden Number	13	Julian Period	6625.

Health.

HEALTH is a state of physical, mental and moralequilibrium, a normal functioning of body, mind, and soul. It is the state when work is a pleasure, when the world looks good and beautiful, and the battle of life seems worth while. Health is the antithesis of disease, degeneracy, and crime.

The laws of health are as inexorable as the law of gravitation, as exacting as eternal justice, as relentless as fate, and their violation is the beginning and cause of all disease, suffering, and sin.

Health is the most desired of earthly blessings. When finally lost it cannot be purchased by uncounted millions, restored by the alienist, or returned by the pulpit.

Health is that state of happiness, faith and love whose prototype was the first man—Adam; whose ideal is the Christ.

S. J. Crumbine, M. D., Topeka, Kan.

BULLETIN

OF THE

Kansas State Board of Health.

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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DEACON, Registrar.

No. 1.

JANUARY, 1912.

VOL. VIII.

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 page 13.

DEATHS AND BIRTHS IN KANSAS,

Month of November, 1911.

DEATHS.

Stillbirths not included.	
Typhoid fever.....	70
Smallpox	1
Measles	0
Scarlet fever.....	2
Whooping cough.....	5
Diphtheria.....	24
Dysentery	4
Tuberculosis, all forms.....	100
Cancer, all forms.....	63
Rheumatism, all forms.....	19
Diabetes.....	19
Other general diseases.....	48
Meningitis.....	15
Cerebral hemorrhage.....	70
Paralysis.....	32
Other diseases nervous system.....	41
Organic heart disease.....	110
Other diseases circulatory system.....	38
Broncho-pneumonia	18
Pneumonia	35
Other diseases respiratory system.....	37
Diarrhea and enteritis (under 2 years)....	21
Diarrhea and enteritis (2 years and over),	13
Appendicitis.....	10

Diseases of liver and adnexa.....	5
Peritonitis.....	14
Other diseases digestive system.....	54
Acute nephritis.....	14
Bright's disease.....	65
Other diseases genito-urinary system.....	33
The puerperal state.....	1
Diseases of the skin, etc.....	5
Diseases of the bones, etc.....	1
Malformations.....	10
Diseases of early infancy.....	107
Old age.....	82
Suicides.....	15
Accidents.....	98
Homicides.....	1
Ill-defined diseases.....	38
Total deaths.....	1,398

BIRTHS.

Males.....	1,359
Females.....	1,143
White.....	2,438
Colored.....	64
Total births, 2,502.	
Stillbirths, ...	

VITAL STATISTICS

Reported to the Kansas Board of Health for December, 1911.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTY.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
The State... totals, December, 1910...	259 248	19 53	61 107	1 28	114 141	7 15	273 339	5 6	205 177	0 1	28 157	0 3
Allen	0	0	0	0	2	0	1	0	0	0	0	0
Anderson	0	0	0	0	0	0	0	0	0	0	1	0
Atchison	0	0	0	0	0	0	16	0	0	0	0	0
Barber	1	0	2	0	0	0	0	0	0	0	0	0
Barton	0	0	0	0	0	0	1	1	0	0	0	0
Bourbon	0	0	0	0	1	0	0	0	2	0	3	0
Brown	1	0	1	0	1	0	3	0	0	0	0	0
Butler	0	0	1	0	0	0	2	0	0	0	0	0
Chase	0	0	0	0	0	0	0	0	0	0	0	0
Chautauqua	0	0	0	0	0	0	0	0	0	0	0	0
Cherokee	0	0	3	0	6	1	5	0	0	0	0	0
Cheyenne	0	0	0	0	0	0	0	0	0	0	0	0
Clark	0	0	0	0	0	0	2	0	0	0	0	0
Clay	0	0	0	0	0	0	2	0	0	0	0	0
Cloak	0	0	0	0	0	0	2	0	0	0	0	0
Coffey	0	0	3	0	0	0	0	0	21	0	0	0
Comanche	0	0	0	0	0	0	0	0	0	0	0	0
Cowley	1	0	0	0	0	0	0	0	20	0	0	0
Crawford	0	0	3	0	1	0	3	0	0	0	0	0
Decatur	1	1	0	0	0	0	0	0	0	0	0	0
Dickinson	0	0	0	0	0	0	0	0	8	0	0	0
Doniphan	0	0	1	0	0	0	0	0	0	0	0	0
Douglas	1	1	0	0	3	1	0	0	0	0	5	0
Edwards	0	0	0	0	1	0	7	1	0	0	3	0
Ellis	1	1	0	0	0	0	2	0	0	0	0	0
Ellsworth	0	0	0	0	0	0	0	0	0	0	0	0
Finney	0	0	0	0	0	0	0	0	0	0	0	0
Ford	1	0	0	0	0	0	0	0	0	0	0	0
Franklin	0	0	0	0	0	0	5	0	0	0	2	0
Franklin	0	0	4	0	0	0	1	0	0	0	0	0
Gearv	0	0	1	0	7	2	0	0	0	0	0	0
Gove	0	0	1	0	0	0	0	0	0	0	0	0
Graham	0	0	0	0	0	0	0	0	3	0	0	0
Grant	0	0	0	0	0	0	0	0	0	0	0	0
Gray	0	0	0	0	0	0	0	0	0	0	0	0
Greeley	0	0	0	0	0	0	0	0	0	0	0	0
Greenwood	0	0	0	0	4	0	1	0	0	0	0	0
Hamilton	0	0	0	0	0	0	0	0	0	0	1	0
Harper	0	0	0	0	0	0	4	0	0	0	0	0
Harvey	0	0	0	0	0	0	15	0	0	0	3	0
Haskell	0	0	0	0	0	0	0	0	0	0	0	0
Hodgeman	0	0	0	0	0	0	0	0	0	0	0	0
Jackson	0	0	1	0	3	0	9	0	0	0	0	0
Jefferson	0	0	0	0	2	0	0	0	0	0	0	0
Jewell	0	0	0	0	0	0	0	0	1	0	0	0
Johnson	1	0	2	0	0	0	0	0	0	0	0	0
Kearny	0	0	1	0	0	0	0	0	0	0	0	0
Kingman	0	0	0	0	0	0	0	0	0	0	0	0
Klows	0	0	0	0	0	0	0	0	0	0	0	0
Labette	0	0	0	0	0	0	0	0	0	0	0	0
Lane	0	0	0	0	0	0	12	0	0	0	0	0
Leavenworth	0	0	3	0	2	0	0	0	0	0	2	0
Lincoln	0	0	0	0	0	0	0	0	0	0	0	0
Linn	0	0	0	0	1	0	2	0	0	0	0	0
Logan	0	0	0	0	0	0	0	0	0	0	0	0
Lyon	1	0	0	0	3	0	3	0	1	0	2	0
Marion	1	0	2	0	0	0	0	0	0	0	0	0
Marshall	0	0	0	0	0	0	0	0	0	0	0	0
McPherson	1	0	2	0	5	0	2	0	0	0	0	0

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases ...	Deaths.	Cases ...	Deaths.	Cases ...	Deaths.	Cases ...	Deaths.	Cases ...	Deaths.	Cases ...	Deaths.
Maede	0	0	1	0	0	0	2	0	0	0	0	0
Miami	1	0	1	0	0	0	0	0	0	0	0	0
Mitchell	1	1	0	0	0	0	0	0	0	0	0	0
Montgomery	0	0	1	0	2	0	1	0	0	0	0	0
* Morris												
Morton	0	0	0	0	0	0	0	0	0	0	0	0
Nebraska	0	0	0	0	2	0	0	0	0	0	0	0
Neosho	2	1	1	0	0	0	0	0	0	0	1	0
Ness	0	0	0	0	0	0	0	0	2	0	0	0
Norton	0	0	1	1	0	0	0	0	0	0	0	0
Osage	2	0	0	0	2	0	4	0	0	0	0	0
Osborne	0	0	0	0	4	0	6	0	0	0	0	0
Ottawa	0	0	0	0	0	0	6	0	0	0	0	0
Pawnee	0	0	0	0	0	0	15	1	0	0	0	0
* Phillips												
* Pottawatomie												
Pratt	0	0	0	0	0	0	15	0	0	0	2	0
Rawlins	0	0	0	0	0	0	0	0	0	0	0	0
* Reno												
Republic	0	0	0	0	0	0	0	0	0	0	0	0
Rice	1	0	0	0	2	1	2	0	0	0	0	0
Riley	1	0	0	0	0	0	12	0	2	0	1	0
Rooks	1	1	0	0	2	0	2	0	0	0	0	0
* Rush												
* Russell												
Saline	2	0	0	0	0	0	0	0	0	0	0	0
Scott	0	0	0	0	0	0	0	0	0	0	0	0
Sedgwick	0	0	1	0	1	0	12	2	0	0	0	0
Seward	0	0	0	0	0	0	0	0	0	0	0	0
Shawnee	1	0	0	0	10	1	0	0	0	0	0	0
* Sheridan												
Sherman	0	0	0	0	0	0	0	0	0	0	0	0
* Smith												
Stafford	0	0	0	0	0	0	0	0	0	0	0	0
* Stanton												
Stevens	0	0	1	0	0	0	1	0	0	0	0	0
Sumner	2	2	2	0	2	0	6	0	4	0	0	0
Thomas	0	0	0	0	0	0	0	0	4	0	0	0
Trego	0	0	0	0	0	0	0	0	0	0	0	0
* Wabaunsee												
Wallace	0	0	0	0	0	0	0	0	0	0	0	0
Washington	0	0	1	0	0	0	1	0	0	0	0	0
Wichita	0	0	0	0	0	0	0	0	0	0	0	0
Wilson	1	1	1	0	4	0	11	0	0	0	0	0
Woodson	0	0	0	0	0	0	0	0	131	0	0	0
Wyandotte	0	0	0	0	0	0	1	0	0	0	0	0
Cities:												
Fort Scott	2	2	1	0	2	1	0	0	0	0	0	0
Atchison	2	0	2	0	0	0	0	0	0	0	0	0
Coffeyville	1	0	2	0	1	0	2	0	0	0	0	0
Kansas City	10	0	9	0	19	0	5	0	2	0	1	0
Leavenworth	0	0	2	0	0	0	0	0	0	0	0	0
Parsons	2	1	0	0	0	0	1	0	0	0	0	0
Pittsburg	1	0	0	0	11	0	12	0	0	0	0	0
Topeka	9	5	2	0	7	0	5	0	2	0	0	0
* Wichita												
Hutchinson	1	0	0	0	0	0	0	0	5	0	1	0
State Institutions.	203	1	0	0	0	0	0	0	0	0	0	0

* No report.

Next to tuberculosis the venereal disease problem is the one that is blasting more lives and homes and causing more human suffering than any other in America.

Work of the Division of Food and Drugs for 1910 and 1911.

For two years after the enactment of the Kansas Food and Drugs law, the department pursued the policy of enforcement by instruction and education and appeal to "good business" and obedience to law, rather than start in on a campaign of prosecution for all violators. The history of the work in the state has proven the wisdom of this course, for there is a desire on the part of most dealers and manufacturers to not only comply with the spirit and letter of the law, but a cordial coöperation on their part with the department in attaining such result. This has all been accomplished with comparatively few resorts to the courts. The law now having been in operation almost five years, the time has come when those who cannot be taught or persuaded to obey these most beneficent laws, cannot reasonably expect the department to withhold prosecution. Accordingly, a number of cases have been brought the past two years, which are herewith published as required by statute; cases begun but not yet terminated are not included.

LIST OF PROSECUTIONS BROUGHT UNDER THE FOOD AND DRUGS LAW.

Substandard Ice Cream:

- Myers Sanitary Milk Co., Kansas City. Minimum fine and costs.
- North End Dairy, Kansas City. Minimum fine and costs.
- S. F. Wolf, bakery, Kansas City. Minimum fine and costs.
- Rayburn Bros., Kansas City. Minimum fine and costs.
- Pete Koclanes, Kansas City. Minimum fine and costs.
- St. Louis Dairy Co., Kansas City. Minimum fine and costs.

Substandard Milk:

- M. Rosenblume, Kansas City. \$5, and costs \$4.
- Interstate Dairy Co., Kansas City. \$5, and costs \$4.
- W. H. McHale & Co., Kansas City. \$5, and costs \$4.
- North End Dairy Co., Kansas City. \$5, and costs \$4.
- J. Spector, Kansas City. \$5, and costs \$4.
- J. H. Henry, Mgr. North End Dairy Co. \$5, and costs \$4.
- B. Markowitz, Kansas City. \$5, and costs \$4.
- W. Waldner, Kansas City. \$5, and costs \$4.
- H. L. Armentrout, Kansas City. \$5, and costs \$4.
- J. R. Collins, Kansas City. \$5, and costs \$4.
- P. J. Broll, Kansas City. \$5, and costs \$4.
- St. Louis Dairy Company, Kansas City. \$5, and costs \$4.
- Pete Nessleship, Kansas City. \$5, and costs \$4.
- A. C. Ayres, Greenleaf. \$10 and costs.
- American Butter Co., Kansas City, Mo., short weight butter. \$5 and costs.
- Dr. J. S. Allen, Hutchinson. Adulterated drug. \$10 and costs.
- Dr. Robt. Algie, Linn. Adulterated drug. \$1 and costs.

- E. W. Jennings (Armour Pkg. Co.) K. C. Uncovered meats. \$10, costs \$7.45.
J. B. Anderson, Syracuse, insanitary restaurant. No fine, but \$5.75 costs.
W. H. Avery, Larned, insanitary grocery store. \$5, costs \$5.50.
L. F. Ainsworth, Larned, insanitary grocery store and illegal display. \$5, and costs \$5.50.
L. F. Ainsworth, Larned, insanitary condition of stock and store. Conviction and fine.
O. N. Burk and C. L. Atchinson, Gardner, insanitary restaurant. Fined \$2.50, and costs \$8.75.
A. Bursher, Wichita, uncovered fruits. Fined \$10, costs \$5.45.
Bechner & Hunt, Conway Springs, insanitary slaughter house. Fined \$5 each, and costs.
J. Burshten, Wichita, illegal sidewalk display. Fined \$5, costs \$4.50.
Louis Baehr, jr., Paola. Fined \$5, costs \$2.50.
H. L. Burke, Allen. Fined \$100, and costs.
J. M. Bell, Mgr., Dodge City, insanitary restaurant. Fined \$20, and costs.
H. R. Brown, Dodge City, insanitary grocery store. Fined \$20, and costs.
C. E. Blake, Hutchinson. Fined \$25, and costs.
S. E. Burgess, Larned, adulterated ice cream. Fined \$5, and costs.
Frank Brown, Kansas City. Fined \$5, and costs.
Franz Bachman, Fort Scott, illegal ice cream. Fined \$1, costs \$7.50.
R. L. Bailey, Burden, adulterated drug. Fined \$1, and costs.
Fred A. Brechet, Burns, substandard tr. iodine. Fined \$5, and costs.
Louis Berges, Onaga, adulterated drug. Fined \$5, and costs.
L. W. Bell, Hutchinson. Fined \$5.
J. W. Bixler, Hutchinson. Fined \$10.
R. I. Bilby, Sharon Springs. Fined \$20, and costs.
Mr. Bailey, Johnson county, illegal iodide potassium. Fined \$1, and costs.
Baughman Brothers, Topeka, substandard ice cream. Fined \$25, costs \$15.
Baker & Son, Ellsworth. Fined \$25, costs \$6.25.
S. E. Burgess, Larned, illegal ice cream. Conviction and fine.
T. E. Branden, Clyde, substandard drug product. Paid fine and costs.
E. N. Bailey & Co., Eureka, substandard tr. iodine. Fined, costs \$6.30.
John H. Brown & Co., Atchison, substandard vinegar. Fined \$5, costs \$12.50.
Clarence Higgs (Cudahy Pkg. Co.) Kansas City. Fined \$10, costs \$7.45.
John Comba, Carona, killing lump-jaw steer. Fined \$50, and costs.
Cizek, Ellsworth, insanitary slaughter house. Fined \$5, costs \$6.40.
Herman Colson, Ionia, substandard essence peppermint. Fined \$1, and costs.
W. H. Campbell (C. C. Yost Pie Co.), Kansas City, insanitary wagon. Fined \$5, and costs.
Robert Curran, Kansas City, dirty milk. \$5 and costs.
Clark, Grainfield. \$25 and costs.
J. H. Clayborne, Kansas City. \$5 and costs.
Joseph Cheskey, Hutchinson. \$4.
D. A. Crispi, Hutchinson. \$10 and costs.
H. E. Cowgill, Burlington, adulterated drug. \$5 and costs.
Champagne Cider Works Co., Kansas City, saccharine. \$25 and costs.
W. A. Griswold, Kansas City agent for Continental Creamery Co., Topeka, short weight butter. \$5 and costs.
W. L. Curtis, Seward, insanitary meat market and store. \$5 and costs.

- R. D. Crawford, Emporia, insanitary bakeshop. \$5 and costs.
 J. M. Craig, Garnett, adulterated drug. Paid fine and costs.
 S. E. Cogswell, Kirwin, adulterated drugs. \$10 and costs.
 Champagne Cider Co., Kansas City, Mo. \$25 and costs.
 F. D. Coryell, Junction City, feeding dead animals at slaughter house. \$10, and costs \$5.40.
 Demain & Powers, Marksville, adulterated drug. \$10 and costs.
 DeCoursey Pure Milk Co., Kansas City, dirty milk. \$10, and costs \$8.
 Geo. A. Duncan, Great Bend. \$5, and costs \$6.
 W. E. Ditch, Galva, substandard ice cream. \$25, and costs \$10.15.
 DeCoursey Pure Milk Co., Kansas City, formaldehyde in milk and milk substandard. \$5 and costs.
 DeCoursey Pure Milk Co., Kansas City, milk substandard. \$5 and costs.
 DeCoursey Pure Milk Co., Kansas City, substandard milk. \$5 and costs.
 J. H. Donecker, Bunker Hill, substandard vinegar. \$5 and costs.
 Forsberger & Co., Cleburne. \$10, and costs \$8.25.
 M. S. Forbes, Pittsburg. \$5, and costs \$7.25.
 Fowler Packing Co., Kansas City, hauling uncovered meats. \$25 and costs.
 Eagle Bottling Works, Kansas City, saccharine in pop. \$25 and costs.
 John Fritzel, Lawrence. \$25.
 Carlos Fay, Dodge City. \$1 and costs.
 Forline & Utt, Downs, adulterated drug. \$30 and costs.
 Shelly A. Fields, Liberal, feeding hogs filthy material. \$10, and costs \$1.75.
 Eagle Bottling Works, Kansas City, Mo., saccharine in pop. \$25 and costs.
 D. C. Everson, Cawker City, adulterated drugs. Paid fine and costs.
 Fleming Pharmacy, Miltonvale, substandard drugs. Paid fine and costs.
 Dr. Hubert Fannon, Bucklin, adulterated drugs. \$10 and costs.
 A. A. Florner, Junction City, substandard ice cream. Fine, and costs \$9.10.
 Grant Ernst, Humboldt, diseased meat. Minimum fine and costs.
 John Fritzel, Lawrence, watered milk. \$25 and costs.
 Geo. Finch, Wichita, illegal sidewalk display. \$5, and costs \$4.50.
 Forline & Utt, Downs, adulterated drugs. Two counts, each \$15.
 Damerell & Sons, Erie, diseased animals. Minimum fine and costs.
 J. H. Shirt (Hammond Pkg. Co.), St. Joseph, Mo., uncovered meats. \$10, and costs \$7.45.
 Mr. McIntyre, Olathe, misbranded food product. \$50, and costs \$7.25.
 B. D. Hunter, Jetmore. \$5 and costs.
 Harpster's Pharmacy, Hepler, adulterated drug. Paid fine and costs.
 Inter-City Dairy Co., Kansas City, Kan., dirty milk. \$5 and costs.
 Geo. Jenkins, Wamego, adulterated ice cream. \$25 and costs.
 Johnson Bros. & Co., Cleburne. \$10, and costs \$8.25.
 D. W. Hainer, Emporia, adulterated drug. \$50, and costs \$6.
 P. E. Herndon, Syracuse, insanitary store. Costs, \$5.75.
 John Hetzer, Drywood, insanitary store. \$5, and costs \$5.
 Albert Huber and Jesse Huber, Wichita, illegal display. Each \$1.50, and costs \$5.95.
 Wm. Holzapfel, Larned, adulterated ice cream. \$25 and costs.
 J. V. Humphrey, Junction City. \$5 and costs.
 Tom Hill, Larned. \$10, and costs \$2.
 L. A. Hamner, Macksville, dirty store and slaughter house. \$5, and costs \$6.10.

- William Haltzapfel, Larned, illegal ice cream. Conviction and fine.
John Henning, Emporia, insanitary slaughter house. \$5 and costs.
J. L. Johns, Junction City, substandard ice cream. Fine, and costs \$9.10.
Hoisington Creamery Co., Hoisington, substandard ice cream. \$25 and costs.
Geo. W. Jenkins, Wamego, substandard ice cream. Fine \$25 and costs.
H. Garland, Fredonia. Fine \$2 and costs \$3.
R. W. Garrett, Russell. Defendant forfeited bond \$50, by nonappearance.
Grube & Glenn, Wyandotte county. Fine \$10 and costs.
Gariott Bros., Pittsburg. Fine \$5 and costs \$9.25.
Henry C. Gerhard, Lawrence, bakery products uncovered. Fine \$1 and costs \$5.
N. Gershon, Louis Gershon, Abe Gershon, Wichita, illegal sidewalk display. Fine \$5, and cost \$4.50.
E. Gerson, Wichita, illegal sidewalk display. Fine \$5 and costs.
W. O. Goodwin, Wichita, obstructing inspection. Fine \$10 and costs.
E. A. Winter, Webber, adulterated drug. Fine \$1 and costs.
C. S. Winchester, Hutchinson. Fine \$5 and costs \$13.90.
Wolf Confectionery and Bakery, substandard goods. Fine \$5 and costs.
Birt Neet, Girard, substandard milk. Fine \$1 and costs.
Albert and Leo Wiese, Kansas City. Fine \$25 and costs \$4.
W. C. Ward, Wichita, insanitary bakery. Fine \$1 and costs \$5.60.
Harry Whittelsey, Topeka, uncovered products. Fine \$5 and costs.
L. R. Wentz, Wichita, insanitary place of business. Fine \$5 costs \$5.45.
A. J. Wright, Wichita, insanitary grocery stock. Fine \$10 and costs \$5.45.
Fred Waudel Dairy Co., Kansas City, keeping cows and allowing them to drink filthy, stagnant water. Fine \$10 and costs \$8.
A. Waldner Milk Co., Kansas City, dirty milk. Fine \$10 and costs \$8.
Harry Weymiller, Lawrence, insanitary restaurant. Fine \$1 and costs \$5.
G. A. Watkins, Cherryvale, exposing fish. Fine \$1.
C. W. Wilbur, Cherryvale, misbranded catsup. Fine \$1.
T. H. Traynor, Dodge City, dirty restaurant. Fine \$20, and costs \$5.
L. G. Tage, McPherson, substandard ice cream. Fine \$25, and costs \$10.15.
T. H. Traynor, Dodge City, insanitary restaurant. \$20 and costs.
Thompson & Brown Lard Co., Kansas City, illegal meat. \$5, and costs \$3.
C. H. Van Anchan, Wichita, illegal sidewalk display. \$1, and costs \$5.60.
Tony Toneff Bakery, Kansas City, insanitary bakeshop. \$50 and costs.
L. Uzelac & V. Kalimch Grocery Co., Kansas City, unsanitary lard. \$50 and costs.
T. W. Thompson, Santa Fe Hospital, Topeka. \$50, and costs \$28.
T. Thorp, Kansas City, Kan. \$13.60, including costs.
Townsend Drug Co., Abilene. Fine and costs, \$13.50.
J. H. Traynor, Dodge City, insanitary restaurant. \$20 and costs.
Chas. Thurium, Lawrence, insanitary slaughter house. \$10, and costs \$7.70.
United Drug Co., Pleasanton, misbranded drugs. Two counts, \$1.
United drug Co., Pleasanton, misbranded tablets. Two counts, \$1.
J. S. Schleifer, Lawrence, insanitary slaughter house. \$5, and costs \$7.30.
M. Schanker, Kansas City, dirty milk. \$5, and costs \$4.
J. W. Shellhass, Junction City, substandard ice cream. Fine and costs, \$9.10.
Steffens-Bretch Ice and Ice Cream Co., Hutchinson, substandard ice cream. Fine and costs, \$18.15.
C. L. Stocks, Bushong, Kansas, substandard drugs. \$5 and costs.

- Scott Bros., Independence, wormy peaches. Minimum fine and costs.
- Fred Schroeder, Leavenworth, adulterated drug. Minimum fine and costs.
- L. Segelborn, Kansas City, dirty milk. \$5, and costs \$4.
- J. F. Casey (Swift Pkg. Co.), uncovered meats. \$10, and costs \$7.45.
- St. Louis Dairy Co., Kansas City, substandard milk. \$5 and costs.
- C. D. Spaugh, Great Bend, illegal sidewalk display. \$5, and costs \$5.50.
- Mrs. J. J. Stevens, Wellington, decomposed eggs. \$5, and costs \$5.
- G. W. and Theodore Sams, Great Bend. \$5, and costs \$6.
- John Simpson, Kansas City. \$5 and costs.
- C. F. Smith, Kansas City, illegal sidewalk-display. \$5 and costs.
- J. W. Shellhaas, Junction City. \$5 and costs.
- William Stansbury, Lakin. \$25, and costs \$7.25.
- Schultz Bros., Manhattan, sulphites in hamburg steak. \$100 and costs.
- H. S. & J. S. Schleifer, Lawrence. \$10.
- J. W. Sutton, Glasco. \$25 and costs.
- F. C. Sullivan, Emporia, insanitary slaughter house. \$5, and costs \$1.75.
- J. I. Sheets, Mound City, adulterated drugs. \$1.
- V. A. Smith, Mgr. Johnson County Coöperative Co., insanitary meat market. \$2.50, and costs \$8.75.
- Louis Rocklund, Lawrence, insanitary restaurant. \$1 and costs.
- Jacob Ross, Kansas City. \$5 and costs.
- H. S. Rossman, Paola. \$5, and costs \$2.50.
- J. L. Ruble, Parker. \$10 and costs.
- J. T. Royane, Kansas City, illegal sidewalk display. \$5, and costs \$3.
- R. A. Robinson, Kansas City. \$5 and costs.
- J. R. Renick, Larned. \$25 and costs.
- W. L. Rochat, Larned. \$25 and costs.
- J. R. Roberts, Garnett, insanitary slaughter house. \$7.50, and costs \$2.50.
- N. Roe & F. Swearingen, Garnett, insanitary slaughterhouse. \$7.50, and costs \$2.50.
- Rayburn Bros., Kansas City, adulterated milk. \$5 and costs.
- Harvey Reitz, Kansas City, selling impure food. \$1, and costs \$7.70, and committed to county jail until paid in full.
- C. Rasmisson, Emporia, illegal display. Costs \$7.75.
- Roger's Drug Store, Arlington, adulterated drug. \$10 and costs.
- J. R. Rennick, Larned, illegal ice cream. Conviction and fine.
- W. L. Rochat, Larned, substandard cream. Conviction and fine.
- J. W. Russell and Frank Hunt, Burlington. Minimum fine and costs.
- Rural Ice Cream Co., Emporia, substandard ice cream. \$5 and costs.
- C. Rasmersen, Emporia, insanitary place of business. \$5 and costs.
- Red Cross Pharmacy, Edgerton, substandard tr. iodine. \$1 and costs.
- Reitz & Reitz, Kansas City, lard mixture. \$1 and costs.
- A. L. Pullins, Council Grove, insanitary slaughter house. \$20, and costs \$5.75.
- Philip Pleatsekas and Jim Pappantonis, Kansas City, insanitary bakeshop. \$50 and costs.
- E. Pearson, Kansas City. Fine including costs, \$18.60.
- M. Paulin, Wichita, illegal display. \$10, and costs \$5.45.
- Otto Peuker, Paola. \$5, and costs \$2.50.
- Quinn Brothers, Salina, } insanitary meat market. Minimum and costs.
 Quinn & Young, Salina, }
- W. A. Prentice, Hutchinson. Paid costs and fine.

- L. Petz and E. Petz, Great Bend. \$10, and costs \$6.
J. C. Pugh, Sharon Springs. \$10 and costs.
A. K. Potter, Kansas City, for having car cabbage on side road. \$5, and costs \$3.
W. E. and C. F. Peake Bros., Kansas City, insanitary store. \$5, and costs \$4.
J. D. Peoples, Rosedale, adulterated drug. \$10 and costs.
M. Paulin, Wichita, illegal sidewalk display. \$10 and costs.
W. H. Payton, Pittsburg, illegal sidewalk display. \$10, and costs \$2.
Periclis Ziogas and Geo. Costas, Kansas City, insanitary store. \$50 and costs.
Oscar C. Goenour, Topeka, filthy wormy candy. \$25, and costs \$11.
H. Niederee, Larned, insanitary slaughter house. \$5, and costs \$5.90.
B. F. Orr, Altoona, insanitary meat market. \$25, and costs \$5.35.
Henry Ochs, Leavenworth. \$50, and costs \$23.50.
Noggle Windon, substandard ice cream. \$25, and costs \$10.15.
John Neschild, Kansas City. \$5 and costs.
North End Dairy, Kansas City, adulterated milk. \$5 and costs.
O'Brien Pharmacy, Beloit, adulterated Drugs. Paid fine and costs.
Henry Neideree, Larned, insanitary slaughter house. Conviction and fine.
Myers Sanitary Milk Co., Kansas City, adulterated butter. \$5 and costs.
Meyer Sanitary Milk Co., Kansas City, short weight butter. \$5 and costs.
Meriden Creamery Co., Kansas City, short weight butter. \$5 and costs.
F. King, agent Morris Packing Co., Kansas City. Fine \$10, and costs \$7.45.
J. W. Murphy, Hutchinson. Fine \$25, and costs \$51.
Warren Morris, Kansas City. Fine \$5, and costs.
James Murray, Kansas City, illegal weight of bread. Fine \$5, and costs.
B. Murry, Junction City. Fine \$5, and costs.
C. H. Martin, Emporia, illegal sidewalk display. Fine \$5, and costs \$1.75.
Joe Mitchler, Winfield, insanitary meat cellar. Costs \$9.
D. McIntyre, Prairie Center, adulterated vinegar. Fine \$50 and costs.
Mill & Elevator Co., Phillipsburg, short weight meal. Fine \$25 and costs.
Alex McGonigen and R. J. Dombrowsky, Newton, insanitary conditions.
Minimum and costs.
Mould & Son, Pittsburg, illegal sidewalk display. Fine \$10 and costs.
G. Kolsogakis and J. Kolovas, Kansas City, insanitary bakery. Fine \$50 and costs.
H. W. Kerr Dairy Co., Kansas City, dirty milk. Fine \$10 and costs.
Charles Kottal, Bison. Fine \$5 and costs.
Frank Lawrence, Salina. Minimum and costs.
W. B. Kreite, Lakin. Fine \$25 and costs \$7.25.
W. B. Kriste, Deerfield. Fine \$25 and costs.
Kniseley & Hicks, El Dorado. Fine \$25 and costs \$7.75.
Christ Kopp, Kansas City. Fine \$5 and costs.
Legleiter, Grainfield. Fine \$25 and costs.
A. Lyons of Lyons Bros., Hutchinson, dirty store. Fine \$5, and costs \$12.90.
Pete Koctanes, Kansas City, low in butter fat. Fine \$5 and costs.
Lott & Hawkins, Sterling. Minimum and costs.
Pete Koclanes, Kansas City, insanitary candy store. Fine \$5 and costs.
Clyde Leavengood, Rosedale, adulterated drug. Minimum and costs.
W. W. Kirby and R. Lacky, McPherson, imitation honey. Fine \$20 and costs, and thirty days in jail.

PROSECUTIONS TERMINATED IN 1911.

- R. H. Miller, Almena, insanitary meat market. \$10 and costs. I.
 F. E. Munger, Atwood, short weights. \$5, and costs \$6.25. I.
 B. Cheatwood, Argentine, adulterated milk. \$1 and costs. B.
 E. A. Stephenson, Alton, adulterated candy. \$7.50 and costs. I.
 C. F. Daggett, Belleville, short weight butter. \$5 and costs. I.
 J. W. Russell and Frank Hunt, Burlington. Case dismissed. P.
 Mike & Mot Schiltz, Clay Center, meat preserved with sulphites. \$15 and costs. I.
 New York Store Merc. Co., Beloit, adulterated ex. lemon. \$5 and costs. I.
 Concordia Creamery Co., Concordia, short weight and misbranded butter. \$100 and costs. I.
 M. L. Trudell, North Cedar, adulterated vinegar. \$1 and costs. I.
 Thomas Foster, Concordia, short weight bread. Minimum fine and costs. I.
 G. E. Bartholow, B. S. Chambers Coal Co., Chambers, insanitary grocery store. \$5 and costs. P.
 Mrs. Temple, Clay Center, filthy refrigerator. \$25 and costs. I.
 Miss Flora Dille, Clay Center, short and dirty sheets being used in hotel. \$25 and costs. I.
 Kurth & Sterling, Clay Center, insanitary slaughter house. \$10 and costs. I.
 Mike & Mott Schiltz, Clay Center, insanitary refrigerator. \$25 and costs. I.
 O. A. Clements, downs, short weight ice. \$10 and costs. I.
 People's Store Co., Effingham, substandard vinegar. \$10 and costs. I.
 C. N. Manker, Ellis, short weight bread. \$10, and costs \$3. P.
 J. W. Sutton, Glasco, insanitary refrigerator and slaughter house. \$50 and costs. I.
 W. J. Montgomery, Greenleaf, adulterated ice cream. \$5 and costs. I.
 O. N. Burk and C. L. Atchison, Gardner, insanitary restaurant. \$2.50 and costs. P.
 E. C. Briggs, Great Bend. \$10 and costs. T.
 Briggs Hotel, Great Bend, insanitary hotel. \$150 and costs. B.
 W. J. Groves, Goff, insanitary hotel. \$25 and costs. I.
 V. A. Smith, Johnson County Coöperative Association, Gardner, insanitary grocery. \$2.50 and costs. P.
 Clyde Smith, Clay Center, adulterated wheat. \$15 and costs. P.
 M. E. Hampton, Iola, short weight apples. \$15 and costs. B.
 D. W. Dennen, Havensville, adulterated vinegar. Costs. I.
 Wm. J. Frey, Junction City, insanitary restaurant. \$15 and costs. P.
 E. H. Cook, Junction City, insanitary café. \$5 and costs. P.
 J. K. Bergin, Junction City, insanitary ice box. \$1 and costs. P.
 Roy Welty, Hill City, insanitary slaughter house. \$10 and costs.
 Roy Welty, Hill City, hogs with contagious diseases running at large. \$10 and costs.
 Joseph Couch, Herndon, insanitary refrigerator. \$10 and costs. I.
 F. Imming, Hanover, eggs unfit for food. \$15 and costs. T.
 Albert Pijsa, Hanover, eggs unfit for food. \$15 and costs. T.
 James Nation, Hollenberg, eggs unfit for food. \$15 and costs. T.
 H. M. Mueller, Hanover, eggs unfit for food. \$15 and costs. T.
 N. J. Schwartz, Hanover, eggs unfit for food. \$15 and costs. T.
 M. Flaherty, Hanover, eggs unfit for food. \$15 and costs. T.

- F. D. Coryell, Junction City, feeding dead animals at slaughter house. \$10 and costs. P.
- G. J. Hoerath, Herkimer, eggs unfit for food. \$15 and costs. T.
- Henry Weyermiller, Lawrence, insanitary restaurant. \$1 and costs. P.
- H. E. and Bert Capen, Lawrence, insanitary lunch room. \$1 and costs. P.
- Lones Rockland, Lawrence, insanitary cellar. \$1 and costs. P.
- Wm. Home & Wm. Jones, Larned, insanitary restaurant. \$25 and costs. B.
- Egisto Mezzera and Christ Ambrosini, Leavenworth, dirty ice box and cellar. \$1 and costs. P.
- Christ Gansz, Leavenworth, insanitary meat market. \$1 and costs. P.
- J. Hall, Leavenworth, sleeping in store room. Case dismissed. P.
- Ivan M. Caldwell, Kansas City, adulterated acetic acid. \$1 and costs. T.
- G. F. Hale, Kansas City, adulterated acetic acid. \$1 and costs. T.
- W. H. Heaton, Kansas City, adulterated acetic acid. \$1 and costs. T.
- A. J. Roughton, La Crosse, dirty grocery store. \$5 and costs. P.
- M. Bodley, Kansas City, adulterated milk. \$1 and costs. B.
- H. L. Arnotrout, Kansas City, adulterated milk. \$1 and costs. B.
- P. Wesselchief, Kansas City, adulterated milk. \$1 and costs. B.
- M. L. Dailey, Kansas City, adulterated milk. \$1 and costs. B.
- Kerr Dairy, Kansas City, adulterated milk. \$1 and costs. B.
- J. F. Kerr, Kansas City, adulterated milk. \$1 and costs. B.
- J. M. Gunther, Kansas City, adulterated milk. \$1 and costs. B.
- B. F. Layton, Kansas City, adulterated milk. \$1 and costs. B.
- Sam Morrow, Kansas City, adulterated milk. \$1 and costs. B.
- J. Godfry, Kansas City, adulterated milk. \$1 and costs. B.
- R. E. Seymore, Kansas City, adulterated milk. \$1 and costs. B.
- W. H. Kerr, Kansas City, adulterated milk. \$1 and costs. B.
- Harrison Drug Company, Kansas City, adulterated acid.
- Keefer's Pharmacy, Kansas City, adulterated spirits of peppermint. Case dismissed. T.
- R. E. Seymore, Kansas City, adulterated milk. \$1 and costs. B.
- P. H. Holmes, Kansas City, adulterated milk. \$1 and costs. B.
- Geo. Dickinson, Kansas City, adulterated milk. \$1 and costs. B.
- C. Waldner, Kansas City, adulterated milk. \$1 and costs. B.
- H. C. Ocks, Kansas City, adulterated milk. \$1 and costs. B.
- J. W. Ford, Kansas City, adulterated milk. \$1 and costs. B.
- J. Henry, Kansas City, adulterated milk. B.
- J. W. Henry, Kansas City, adulterated milk. B.
- Henry Precht, Linn, adulterated vinegar. \$5 and costs. I.
- Phillips Brothers, Kansas City, adulterated lard. Costs. B.
- Sietz & Deltman, Kansas City, adulterated lard. Costs. B.
- Nichols & Gales, Kansas City, adulterated lard. Costs. B.
- Lester Dulin, Kansas City, adulterated lard. Costs. B.
- Al Rogers, Kansas City, adulterated lard. Costs. B.
- T. H. Butler, Kansas City, adulterated lard. Costs. B.
- Chas. Johnson, Kansas City, adulterated lard. Costs. B.
- Kingman Milling Company, Kingman, short weight. \$300 and costs. K.
- J. S. Schleifer, Lawrence, insanitary slaughter house. \$5 and costs. P.
- Chas. Thudium, Lawrence, insanitary slaughter house. \$10 and costs. P.
- L. A. Hammer, Macksville, adulterated meat. \$5 and costs.

- B. L. Bain, Macksville, adulterated meat. \$2.50 and costs.
- L. P. Jordan, Minneapolis, insanitary slaughter house. \$5 and costs. P.
- E. R. Hughes, Minneapolis, insanitary slaughter house. \$5 and costs. P.
- J. O. Cope, Oronoque, pickles with alum. \$5 and costs. I.
- Drake Brothers, Ness City, adulterated vinegar. \$50 and costs. P.
- S. A. Arnold, Neosho Falls, adulterated vinegar. Minimum fine and costs.
- Hugh McDaniel, Neosho Falls, substandard vinegar. Minimum fine and costs.
- C. E. Lease, Norton, insanitary slaughter house. \$10 and costs. I.
- P. F. Lembke, Navarre, adulterated vinegar. \$5 and costs.
- Fred E. Seaman, Pawnee Rock, adulterated meat. \$10 and costs. B.
- L. A. Thullier, Pleasanton, substandard spts. niter, syrup of iodine of iron. \$1 and costs. T.
- Peter Klein, Penokee, short weight sugar. \$5 and costs. I.
- Lottridge & Lottridge, Pratt, substandard tinc. opium. D.
- W. Hampton, Rosedale, adulterated milk. \$1 and costs. B.
- J. P. Jensen, Rosedale, adulterated milk. \$1 and costs. B.
- J. M. Chandler, Rosedale, adulterated milk. \$1 and costs. B.
- J. Floyd, Rosedale, adulterated milk. \$1 and costs. B.
- L. L. Elys, Rosedale, adulterated milk. \$1 and costs. B.
- R. L. Lindequist, Rosedale, adulterated milk. \$1 and costs. B.
- V. W. Puhr, Rosedale, adulterated milk. \$1 and costs.
- F. M. Riffel, Council Grove, sleeping in candy kitchen. \$1 and costs. P.
- Guth & Ohlfest, Rossville, adulterated vinegar. Minimum fine. I.
- Belle Springs Creamery Co., Salina, short weights. \$300 and costs. I.
- Quinn & Hinnenkamp, Salina, insanitary slaughter house. \$10 and costs. P.
- M. J. Quinn, Salina, insanitary slaughter house. \$10 and costs. P.
- John Rhodes, St. George, adulterated meat. \$75. T.
- John Meinburg, Seneca, adulterated ice cream. \$25 and costs. I.
- Otto A. Kelm, Seneca, adulterated ice cream. \$25 and costs. I.
- A. B. Hamacker, Seneca, sulphites in Hamburg. \$25 and costs. I.
- A. A. Schmidt, Topeka, insanitary meat market. \$10 and costs. P.
- V. V. Dart, Topeka, insanitary grocery. \$5 and costs. I.
- Byron Willcuts, Topeka, adulterated cider. \$10 and costs. I.
- Topeka Pure Milk Co., Topeka, adulterated ice cream. \$1 and costs. T.
- Byron Willcuts, Topeka, adulterated cider. Minimum fine and costs.
- Byron Willcuts, Topeka, adulterated cider. Minimum fine.
- Pat Gould & Pat Conley, Wichita, adulterated milk. \$25 and costs. B.
- Otto Kuehne Preserving Co., Topeka, adulterated and misbranded jelly. Fined minimum and costs.

For the year 1911 the traveling inspectors made 10,491 inspections, under the provisions of the food and drugs laws. Especial attention has been paid to sanitation, and it is believed that conditions over the state at the present time are, in the main, very satisfactory.

The Effect of the Environment of Carbonated Beverages on Bacteria.

By C. C. YOUNG and N. P. SHERWOOD, water analysts Kansas State Board of Health.

There is a tradition among bottlers of carbonated soft drinks, founded, as far as can be learned, on very little experimental data, that the conditions under which "soft" drinks are prepared are toxic to all bacteria.

The basis of this idea appears to be statements in the literature which state that carbon dioxide under pressure markedly reduces the number of bacteria in water and that *B. typhosus* and *B. coli* show a reduction of 90 per cent in 24 hours when exposed to carbon dioxide under pressure. However, the experiments that were available were not carried out under bottlers' conditions. The conception held by the majority of manufacturers is that so long as the water is clear and sufficiently soft to carbonate well, no thought need be given to its sanitary quality, as the carbon dioxide under pressure will kill any living organism.

It was the object of this investigation to find whether or not any pathogenic organism could withstand the unfavorable environment of the bottled carbonated beverages a sufficient length of time to reach the consumer.

Investigations of trade conditions showed that, with the possible exception of ginger ale, most of the "pops" put on the market are consumed within ten days from the time of bottling. In fact, during the summer months many instances were found where the goods go directly from under the bottling machine to the consumer.

The following experiments were carried out under trade conditions, with the one exception, however, that all conditions were intensified.

Pop bottles of 240 cc. capacity and ability to withstand 20 pounds' pressure were used. All bottles except the ones to be inoculated with *B. typhosus* were washed in the usual manner; the latter were washed, boiled for 30 minutes and cooled. Several sets of bottles giving different conditions of environment were inoculated. Three sets, of eight bottles each, were inoculated from 48-hour broth cultures of *B. typhosus*, *B. coli communis* and *B. prodigiosus*, respectively, each bottle receiving 1 cc. of its respective culture. Syrup known as bottlers' lemon had been previously added. Four bottles from each of the three sets were then filled, in the usual manner, with carbonated water at 18 pounds' pressure,

at 10° C., and capped. The remaining four bottles in each of the three sets were filled, in the usual manner, with uncarbonated water and capped.

In the fourth and fifth sets no organism was used for inoculation, syrup was added to one but not to the other, and both were filled with carbonated water and capped. A sample of the water used in bottling was also taken. Samples from each set were plated out in the University laboratories 4, 28, 80 and 244 hours after the filling of the bottles. All bottles were kept at room temperature, to correspond with normal conditions in trade. In plating, plain agar was used for *B. prodigiosus*, both plain and litmus-lactose agar for *B. coli*, and litmus-lactose agar for *B. typhosus*. Litmus-lactose agar was used to aid in identification of the last-named organisms. Plates of *B. prodigiosus* were incubated at room temperatures and those of *B. coli* and *B. typhosus* at 37½° C. *B. prodigiosus* was identified by its characteristic red pigment. Presumptive and confirmatory tests were used for *B. coli*. Agglutination in the hanging drop and the Widal reaction were used in identifying *B. typhosus*. The mean results obtained are tabulated below:

TABLE I.
CARBONATED WATER USED.

Duration of exposure before examination.	With syrup.				Without syrup. Not inoculated. No. per cc.
	<i>B. typhosus</i> , No. per cc.	<i>B. coli</i> , No. per cc.	<i>B. prodigiosus</i> , No. per cc.	Not inoculated. No. per cc.	
0 hours	200,000	950,000	850,000	300	20
4 hours	25,000	250,000	800,000	....	....
28 hours	9,000	20,000	250,000	....	....
80 hours	1,200	1,300	150,000	....	....
244 hours	110	900	5,000	150	0

TABLE II.
UNCARBONATED WATER USED.

Duration of exposure before examination.	With syrup.			Without syrup. Not inoculated. No. per cc.
	<i>B. typhosus</i> , No. per cc.	<i>B. coli</i> , No. per cc.	<i>B. prodigiosus</i> , No. per cc.	
0 hours	200,000	950,000	850,000	20
4 hours	200,000	950,000	850,000	....
28 hours	50,000	(**)	(**)	....
80 hours	6,000	100,000	(**)	....
244 hours	900	40,000	110,000	200

** Slipped.

From the above tables we may note the following facts and conclusions:

1. That the number of organisms outside of those introduced was extremely small.
2. That there was a decided reduction in number of the organisms introduced, owing to standing 244 hours uncarbonated.
3. That there was a very marked reduction in numbers of all three organisms introduced, and especially of *B. typhosus*, owing to conditions existing in the carbonated bottles.
4. That there was not a complete killing out of the organisms introduced, during the entire experiment.
5. That *B. prodigiosus* and *B. coli* seemed to be somewhat more hardy than *B. typhosus*.

Undoubtedly¹ the longevity of *B. typhosus* depends in a great measure upon the virulence of the organism, and as the results above show that some of the organisms will live longer than the beverage is normally on the market, the manufacturer should not depend upon the percentage of reduction caused by the carbon dioxide and other substances used.

From the observation that the most hardy individuals can resist these adverse conditions for a considerable length of time, the logical conclusion is that no water should be used in the manufacture of a carbonated drinks that is in the least suspicious, and if a doubtful water is the only source of supply this should be subjected to treatment by some method of sterilization, with subsequent filtration through a trustworthy and efficient filter.

Others!

It's a "bully" good New Year.

"Let your moderation be known to all men."

Have you read the Kansas Health Almanac?

The unventilated gas stove is a menace to health.

Pure foods have a biologic as well as an economic significance.

Optimism is the ability to think cheerfully and act enthusiastically.

"The substance of things hoped for: the evidence of things not seen" — hash!

1. Expert Testimony, Chicago Drainage Canal Case. Water Supply Paper No. 194; Whipple, *Engineering Record*, 1904, p. 746; Houston, Fourth Report Royal Commission, 3, 20-58 (1904).

TO FATHER TIME.

Backward, turn backward, oh, Time, in thy flight!
Give us an autoless day and a night.
Give us a "yellow" sans headlines to scan,
A rustleless skirt, and a hustleless man,
A babe teddy-bearless, a microbeless kiss,
A fistic fight fakeless, a straight-frontless miss,
A giggleless schoolgirl, and—better than that!—
A summer-clad college man wearing a hat!
I know, Father Time, that I'm asking too much.
But turn to a day ere a dinner was lunch,
Swing back to an age peroxideless for hair—
An æon ere "rats" made their rendezvous there—
An old-fashioned breakfast without shredded hay,
A season when farmers went whineless a day,
A burg moving-pictureless—ah, what a treat!
A gumless-girl town and a trolleyless street.
I'm asking too much, but I pray Daddy Time,
For days when a song had both substance and rhyme!

—*The Bohemian.*

BULLETIN

OF THE

Kansas State Board of Health.

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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DRACON, Registrar.

No. 2.

FEBRUARY, 1912.

VOL. VIII.

Cartoon Bulletin.

It is more blessed to prevent than to cure.

The so-called spring "blood purifiers" are spring fakes.

Sun-vivified "night air" is the best; it is freer from the dust and smoke of the city's day life.

A child dead from "only whooping cough" is just as dead as if it died of "horrors! diphtheria!"

The short-weight swindler is violating the eighth commandment, and the injurious food and drug adulterator the sixth.

It is the stuffy, dirty, unventilated rooms that are the cold breeders; not the "draft" nor exposure to low temperature.

The State Board of Health is making a sociological and industrial study of tuberculosis in Kansas cities of the first class.

A clever cartoon tells more than a volume, and the visual reading of a story is more striking and permanent in its effect than the most finished oratory.

The moving pictures and graphic cartoons are used by the Kansas State Board of Health as a regular feature in their public health educational work.

There is no objection to your drinking sassafras tea in the spring for "what ails you," but it would be better to take a little exercise in cleaning up the yard and alley or digging in the garden.

Smile, and the world smiles with you,

"Knock," and you go it alone;

For the cheerful grin

Will let you in

Where the "kicker" is never known.

CONTAGIOUS AND INFECTIOUS DISEASES - Concluded.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
Meade.....	0	0	2	0	0	0	6	1	0	0	0	0
Miami.....	0	0	0	0	0	0	1	0	0	0	0	0
Mitchell.....	0	0	0	0	0	0	0	0	0	0	0	0
Montgomery.....	1	1	0	0	0	0	5	0	0	0	0	0
* Morris.....	0	0	0	0	0	0	0	0	0	0	0	0
Morrison.....	0	0	0	0	0	0	0	0	0	0	0	0
Nemaha.....	0	0	0	0	0	0	0	0	0	0	0	0
Neosho.....	0	0	1	0	1	0	0	0	0	0	0	0
Ness.....	0	0	0	0	0	0	3	0	0	0	0	0
Norton.....	1	0	2	0	0	0	11	0	0	0	0	0
Osage.....	0	0	0	0	0	0	23	0	0	0	0	0
Osborne.....	0	0	0	0	5	0	12	0	7	0	0	0
Ottawa.....	0	0	0	0	0	0	1	0	0	0	0	0
Pawnee.....	0	0	0	0	0	0	2	0	0	0	0	0
* Phillips.....	0	0	0	0	0	0	0	0	0	0	0	0
* Pottawatomie.....	0	0	1	1	0	0	10	1	0	0	4	0
Pratt.....	0	0	0	0	0	0	1	1	0	0	0	0
Rawlins.....	0	0	0	0	0	0	3	0	0	0	0	0
Reno.....	0	0	0	0	0	0	2	0	0	0	0	0
Republic.....	0	0	0	0	0	0	0	0	0	0	0	0
Rice.....	0	0	0	0	0	0	0	0	0	0	0	0
Riley.....	2	1	0	0	0	0	19	1	2	0	2	0
* Rocks.....	0	0	0	0	0	0	0	0	0	0	0	0
* Rush.....	0	0	0	0	0	0	0	0	0	0	0	0
* Russell.....	0	0	1	0	0	0	1	0	0	0	0	0
Saline.....	0	0	0	0	0	0	0	0	0	0	0	0
* Scott.....	0	0	1	0	1	0	12	0	0	0	0	0
Sedgwick.....	0	0	0	0	0	0	0	0	0	0	0	0
Seward.....	0	0	0	0	1	0	0	0	0	0	0	0
Shawnee.....	2	1	0	0	1	0	2	0	0	0	0	0
Sheridan.....	0	0	0	0	0	0	0	0	0	0	0	0
Sherman.....	0	0	0	0	0	0	0	0	0	0	0	0
* Smith.....	0	0	0	0	0	0	0	0	0	0	0	0
* Stafford.....	0	0	0	0	0	0	0	0	0	0	0	0
* Stanton.....	0	0	0	0	0	0	0	0	0	0	0	0
Stevens.....	0	0	0	0	0	0	0	0	0	0	0	0
* Sumner.....	0	0	0	0	0	0	0	0	0	0	0	0
* Thomas.....	0	0	0	0	0	0	0	0	0	0	0	0
* Trego.....	0	0	0	0	0	0	0	0	0	0	0	0
Wabaussee.....	0	0	0	0	0	0	0	0	0	0	0	0
Wallace.....	0	0	0	0	0	0	0	0	0	0	0	0
* Washington.....	0	0	0	0	0	0	0	0	0	0	0	0
Wichita.....	0	0	0	0	0	0	0	0	0	0	0	0
Wilson.....	1	1	0	0	1	0	6	1	0	0	0	0
Woodson.....	0	0	0	0	0	0	0	0	23	0	0	0
Wyandotte.....	0	0	6	0	0	0	0	0	0	0	0	0
Cities:												
Fort Scott.....	0	0	0	0	0	0	0	0	0	0	0	0
* Atchison.....	0	0	2	0	1	0	0	0	0	0	0	0
Coffeyville.....	0	0	4	0	6	0	2	0	4	0	2	0
Kansas City.....	8	0	6	0	3	0	0	0	2	0	1	0
Leavenworth.....	2	0	0	0	0	0	5	0	0	0	1	0
Parsons.....	0	0	0	0	1	0	1	0	2	0	11	0
Pittsburg.....	0	0	0	0	1	0	1	0	2	0	11	0
Topeka.....	2	0	1	0	18	4	1	1	1	1	0	0
Wichita.....	12	6	1	1	5	1	8	0	0	0	1	0
Hutchinson.....	6	0	2	0	1	0	0	0	0	0	0	0
State Institutions.	151	2	0	0	0	0	0	0	0	0	0	0

* No report.

The Kansas Health Almanac will be sent to any Kansas citizen upon request.

Popular education in matters of public health is the most effective way to cure the public ills.

DEATHS AND BIRTHS IN KANSAS,

Month of December, 1911.

DEATHS.

Stillbirths not included.		Diseases of liver and adnexa.....	20
Typhoid fever.....	27	Peritonitis.....	9
Smallpox.....	1	Other diseases digestive system.....	44
Measles.....	1	Acute nephritis.....	19
Scarlet fever.....	10	Bright's disease.....	74
Whooping cough.....	4	Other diseases genito-urinary system.....	17
Diphtheria.....	11	The puerperal state.....	21
Dysentery.....	1	Diseases of the skin, etc.....	5
Tuberculosis, all forms.....	98	Diseases of the bones, etc.....	1
Cancer, all forms.....	74	Malformations.....	5
Rheumatism, all forms.....	12	Diseases of early infancy.....	118
Diabetes.....	22	Old age.....	68
Other general diseases.....	45	Suicides.....	16
Meningitis.....	26	Accidents.....	94
Cerebral hemorrhage.....	72	Homicides.....	13
Paralysis.....	80	Ill-defined diseases.....	23
Other diseases nervous system.....	40	Total deaths.....	1,379
Organic heart disease.....	137		
Other diseases circulatory system.....	36	BIRTHS.	
Broncho-pneumonia.....	38	Males.....	1,618
Pneumonia.....	82	Females.....	1,488
Other diseases respiratory system.....	42	White, 3,054. Colored, 52.	
Diarrhea and enteritis (under 2 years)....	13	Total births, 3,100.	
Diarrhea and enteritis (2 years and over),	8	Stillbirths, 0.	
Appendicitis.....	7		

AGES AT DATE OF DEATH.

<i>Ages.</i>	<i>No.</i>	SEX.	
-1.....	195	Males.....	783
1-2.....	45	Females.....	596
3-5.....	29	COLOE.	
6-10.....	22	White.....	1,230
11-15.....	24	Indian.....	2
16-20.....	30	Black.....	87
21-25.....	64	NATIONALITY.	
26-30.....	67	Native.....	1,128
31-35.....	45	Foreign.....	211
36-40.....	68	Unknown.....	40
41-45.....	58	SOCIAL CONDITION.	
46-50.....	61	Single.....	432
51-60.....	139	Married.....	589
61-70.....	199	Widowed.....	278
71-80.....	215	Divorced.....	7
81-90.....	112	Unknown.....	23
91-100.....	6		
100+.....	1		
Unknown.....	9		
Total.....	1,379		

Approximately one-third of the cases of sickness and early death are preventable.

Any other plan than the total abolition of prostitution has been and always will be a failure!



The Kansas State Board of Health stands for the HOME.



SEVERAL REASONS WHY FLIES SHOULD BE UNWELCOME GUESTS.

SWAT THE FLY!

We expect to make it uncomfortably warm for this class of fakers in Kansas. Move on!





"I DRINK TO THE GENERAL DEATH OF THE WHOLE TABLE"

The dairyman who adulterates milk by the addition of water should be sent to jail; he is an enemy of babies.

WHO WOULDN'T RATHER BE A HORSE IN LOS ANGELES

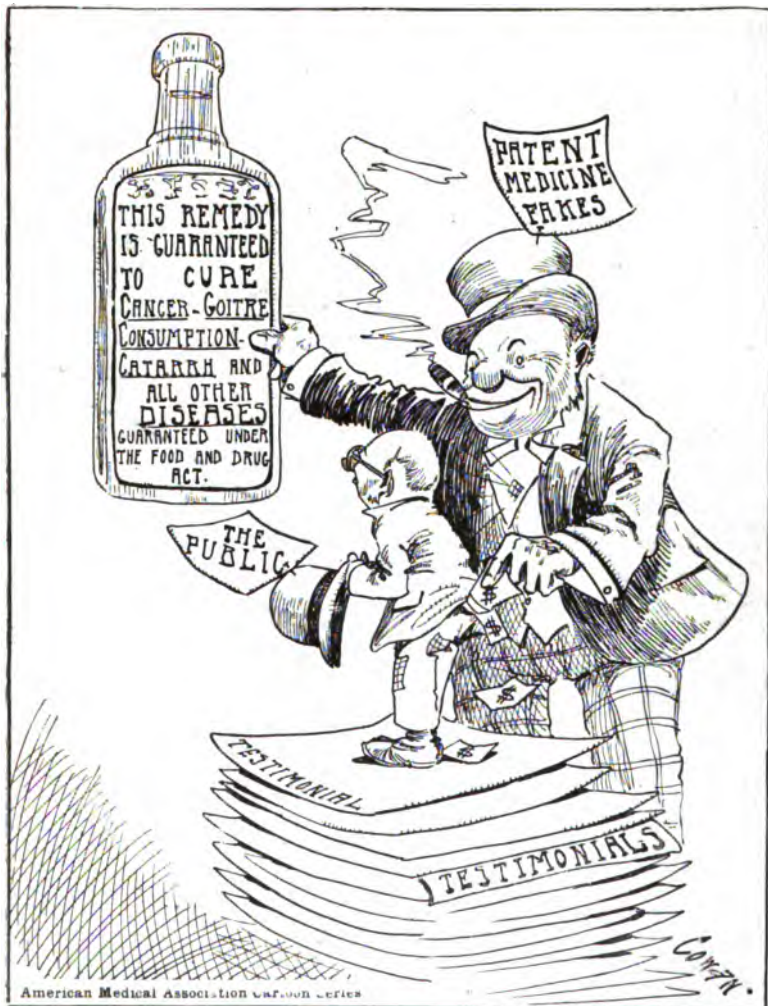


NEWS ITEM.—Individual drinking "cups" for horses will be a reality if a recommendation by the Los Angeles board of veterinary surgeons is carried out. Watering troughs are breeding places for glanders germs, say the veterinarians. The report urges each driver to provide himself with a bucket, from which his horses, and no others, may drink.



THAN A CHILD IN SOME OF OUR CITIES?

Kansas thinks too much of her children and has better manners than to permit the use of the common drinking cup.



THE SICK CHUMP AND HIS MONEY ARE SOON PARTED!

"Our civilization of to-day is in as much danger of certain men of the silk hats as the civilization of Rome was from the Goths and Huns—the men of the red shirts."—*Estey.*

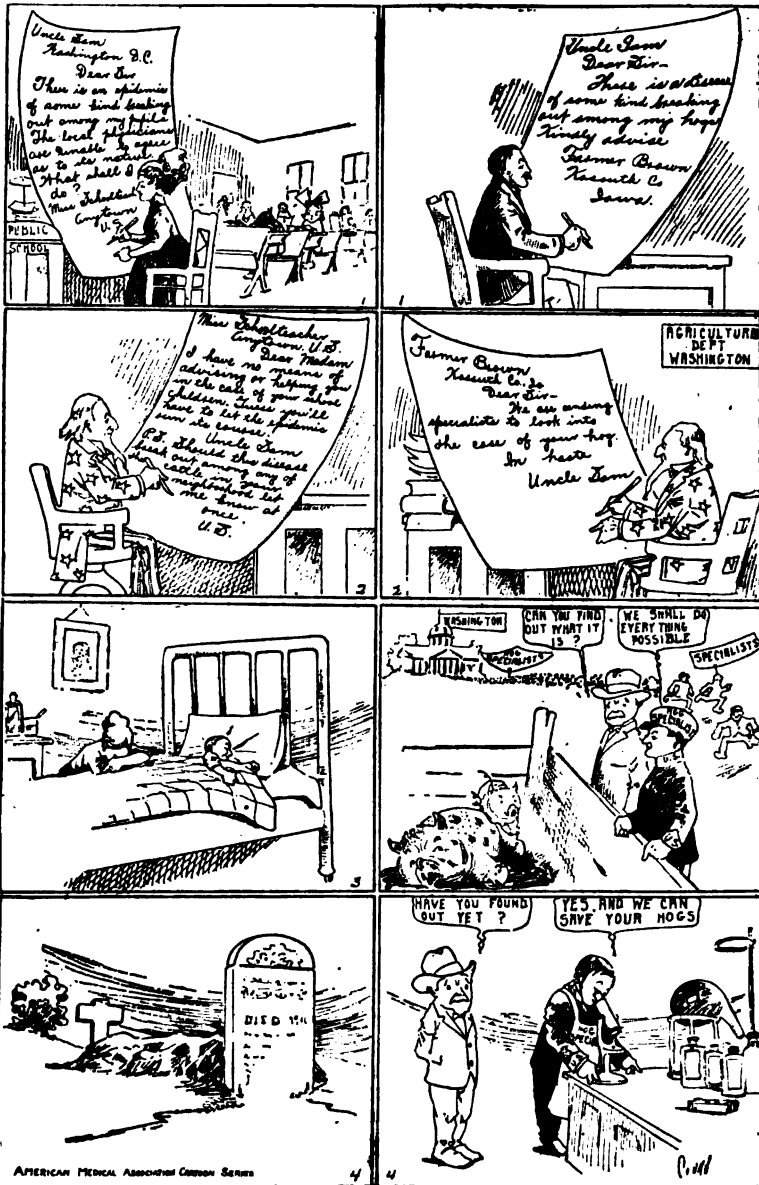


AT WHICH SHOP?

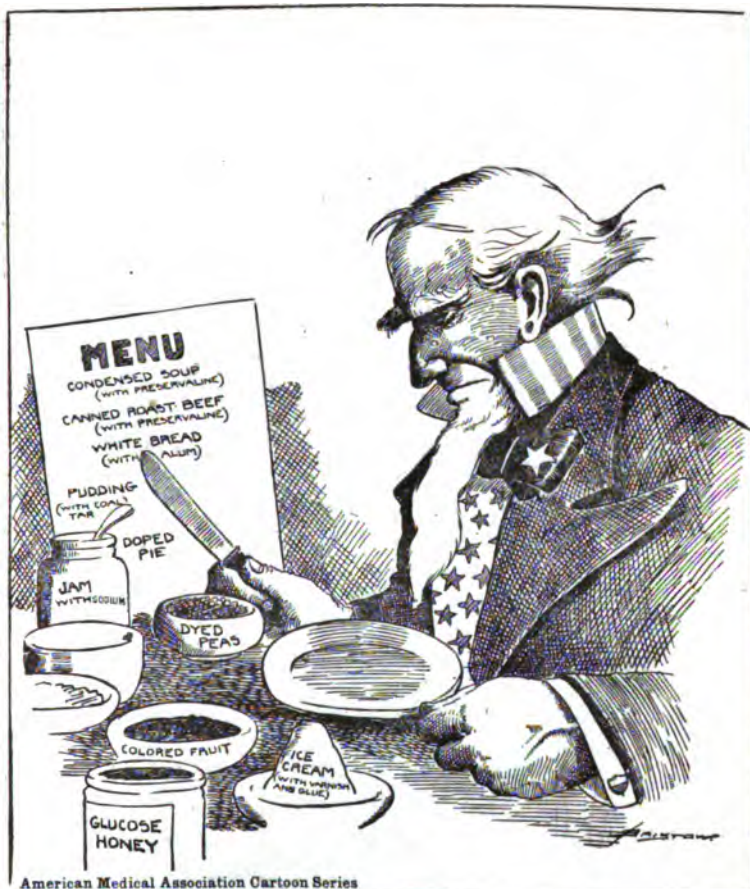
ALL KANSANS PATRONIZE THE PURE FOOD SHOP.

Patrons of the Laboratory, Take Notice: The post-office authorities are now charging first-class rates on all packages which contain specimens for bacteriological examination. Fully seventy-five per cent of all specimens now being received do not carry sufficient postage. This deficiency is now being paid by this department, but owing to limited funds we will not be able to carry this added expense. Please see that all packages are prepaid at letter rate.

S. E. GREENFIELD, *Bacteriologist.*



Kansas takes care of both her people and her hogs, with perhaps a little more emphasis on her hogs!



IS IT ANY WONDER I AM GETTING THE REPUTATION OF BEING A DYSPEPTIC?

Dyspepsia in Kansas, the chief granary of the world, is chiefly due to over-eating.

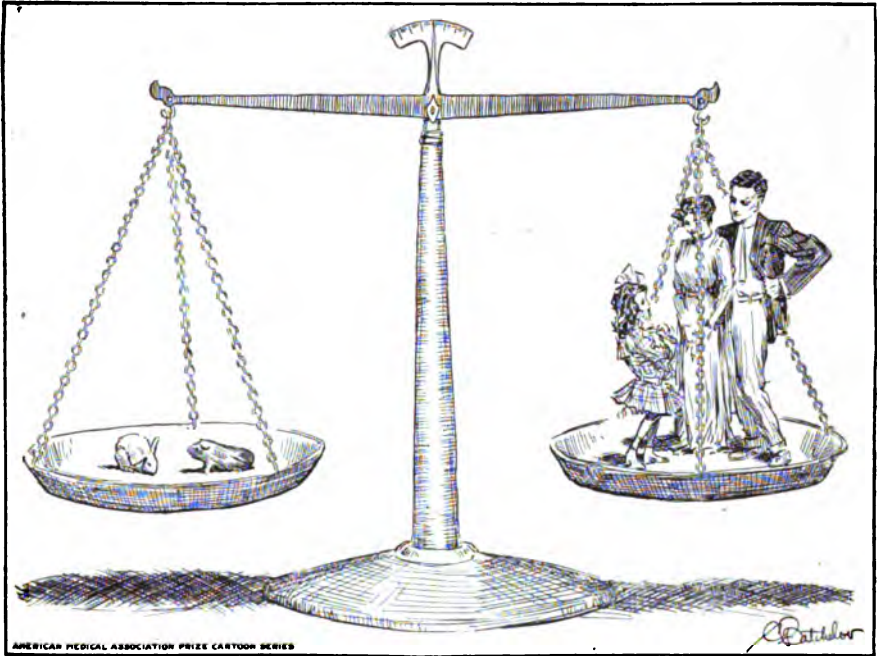
Avoid a Crowd.—"I would rather sit on a pumpkin and have it all to myself than be crowded on a velvet cushion. I would rather ride on earth in an ox cart, with a free circulation, than go to heaven in the fancy car of an excursion train and breathe bad air all the way."—*Thoreau.*



AMERICAN MEDICAL ASSOCIATION PRIZE CARTOON SERIES

IT IS INFINITELY MORE HUMANE, THAT A FEW ANIMALS DIE IN SCIENTIFIC RESEARCH, WITH LITTLE OR NO PAIN, THAN THAT THOUSANDS OF LITTLE CHILDREN SHOULD LIE ON BEDS OF PAIN AND PERHAPS AT LAST, DIE IN AGONY.

The State Department of Health would be unable to carry on their investigations of the cause of infantile paralysis and pellagra without the use of animals for experimentation. We don't believe in experimenting on human beings.



AMERICAN MEDICAL ASSOCIATION PRIZE CARTOON SERIES

TO THE ANTI-VIVISECTIONIST
"AT HOW MANY RABBITS OR GUINEA PIGS DO YOU VALUE
YOUR WIFE, YOUR HUSBAND OR YOUR CHILD?"



AMERICAN MEDICAL ASSOCIATION CARTOON SERIES

PARTNERS

Ode to the Grip.

I.

Tho' you're not a bit particular,
 Still you dodge disease pericular,
 Most of all the ill tuscicular,
 Known by common folks as grip.
 When your head is hot and aching,
 Every limb with chills is shaking,
 And each bloomin' bone is breaking,
 Then you know you've got the grip.
 And you wonder what's the reason
 That your legs and feet are freezin'
 While your flues are hot and wheezin'
 Like the funnels of a ship.
 Oh, it's grip, grip, grip,
 Oh, it's naughty, snaughty grip;
 Your poor nose,
 How it flows;
 How your pocket kerchiefs rip,
 With the grip, grip, grip, grip,
 Grip, Grip, Grip—
 The detrimental, penitential, pestilential grip!

II.

Oh, it's zip!
 And the grip has got you in its nip,
 And your nose is hot and itchy,
 And the water sarts to drip;
 And you snort.
 And between the fits of sneezin'
 You declare your back is freezin'
 And you cuss the winter season
 And you cuss the bloody grip.
 You cavort,
 And you sneeze, sneeze, sneeze,
 And your nose you gently squeeze,
 And you cuss the northern season
 That abets the beastly grip.
 For the sunny south you're pinin',
 Where the sun is always shinin';
 So you soak your hide in quinine
 While you plan a southern trip.
 Yes, you swear
 And declare
 That you'll take a Cuban trip
 To shake the grip.
 Oh! the grip, lovely grip!
 Oh! the sneezin', snortin' grip!
 Oh! how your heads are aching
 And how your noses drip!

—Elmer E. Haynes, M. D., Lewis, Kan.

BULLETIN

OF THE

Kansas State Board of Health.

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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DEACON, Registrar.

No. 3.

MARCH, 1912.

Vol. VIII.

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Vital Statistics for February, 1912, page 34.

Deaths and Births for January, 1912, page 36.

Scales, Weights and Measures Condemned, page 37.

Food Analyses No. XXXVII, page 53.

Get out in the open.

Oh! the joy of the balmy spring air.

There are too many short coffins sold in America.— *Watts.*

Now all together, for a general spring house, yard and street cleaning.

The second edition of the Kansas Health Almanac has been exhausted. The people seemed to like it.

Epidemic cerebro-spinal meningitis will probably not get very far in a community where there is no common drinking cup.

Another case of gonorrhoeal infection of the eye from the use of the roller towel has been reported to the State Department of Health.

And yet some hotels say it is "an unnecessary hardship" to comply with the Board's order abolishing the roller or common towel. What? Suppose it was your eye!

A recent death certificate of a baby who died from tubercular meningitis gave as a contributory cause, "Ignorance and disobedience to instructions." That physician had "gray matter" in his head, all right, all right!

VITAL STATISTICS

Reported to the Kansas Board of Health for February, 1912.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.		January.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Births...	Deaths.
The State... totals, February, 1911 ...	40 44	2 19	106 61	7 7	248 481	9 19	20 279	0 0	484 1,542	2 6	3,235	1,699
Allen	0	0	0	0	0	0	2	0	0	0	53	23
Anderson	0	0	0	0	0	0	0	0	9	0	20	9
Atchison	0	0	3	0	10	0	0	0	5	0	26	7
Barber	0	0	0	0	0	0	0	0	0	0	26	4
Barton	0	0	0	0	0	0	0	0	0	0	33	13
Bourbon	0	0	0	0	11	0	0	0	0	0	17	9
Brown	0	0	0	0	4	0	0	0	0	0	36	21
Butler	0	0	0	0	0	0	0	0	0	0	54	22
Chase	1	0	7	1	1	0	0	0	0	0	16	8
Chautauqua.....	4	0	3	0	0	0	0	0	0	0	29	9
Cherokee.....	0	0	5	0	15	0	0	0	6	0	32	40
Cheyenne.....	1	1	0	0	0	0	0	0	0	0	5	2
Clark	0	0	0	0	0	0	0	0	0	0	14	9
Clay	0	0	0	0	0	0	0	0	0	0	26	7
Cloud	0	0	0	0	2	0	1	0	0	0	54	25
Coffey	0	0	0	0	0	0	2	0	0	0	23	17
Comanche	0	0	0	0	0	0	0	0	0	0	8	3
Cowley	1	0	0	0	0	0	1	0	3	0	59	36
Crawford.....	0	0	1	0	2	0	0	0	150	0	92	48
Decatur.....	0	0	0	0	0	0	0	0	0	0	13	7
Dickinson.....	0	0	0	0	0	0	0	0	0	0	55	27
Doniphan.....	0	0	0	0	0	0	0	0	0	0	26	12
Douglas.....	1	0	2	0	0	0	0	0	0	0	13	9
Edwards.....	0	0	0	0	0	0	0	0	0	0	16	6
Ellis.....	0	0	0	0	0	0	0	0	0	0	15	11
Hills.....	1	1	0	0	0	0	0	0	0	0	33	8
Ellsworth.....	0	0	0	0	0	0	0	0	1	0	29	8
Finney.....	0	0	0	0	0	0	0	0	0	0	15	4
Ford.....	0	0	0	0	5	0	1	0	0	0	22	9
Franklin.....	0	0	1	0	1	0	0	0	0	0	42	23
Geary.....	0	0	4	0	4	1	0	0	6	0	26	12
Gove.....	0	0	0	0	2	0	0	0	0	0	13	1
Graham.....	0	0	0	0	0	0	0	0	0	0	26	3
Grant.....	0	0	0	0	0	0	0	0	0	0	4	0
Gray.....	0	0	0	0	0	0	0	0	0	0	0	1
Greeley.....	0	0	0	0	0	0	0	0	0	0	0	0
Greenwood.....	1	0	1	0	2	0	0	0	0	0	25	11
Hamilton.....	0	0	0	0	1	0	0	0	0	0	3	2
Harper.....	0	0	0	0	0	0	0	0	0	0	18	13
Harvey.....	0	0	0	0	1	0	0	0	0	0	26	15
Haskell.....	0	0	0	0	0	0	0	0	0	0	3	0
Hodgeman.....	0	0	0	0	0	0	0	0	0	0	12	4
Jackson.....	0	0	0	0	2	0	0	0	0	0	23	12
Jefferson.....	1	0	0	0	3	1	0	0	3	0	14	13
Jewell.....	0	0	0	0	0	0	0	0	0	0	44	12
Johnson.....	0	0	3	0	3	0	0	0	0	0	20	15
Keary.....	0	0	0	0	1	0	0	0	0	0	5	2
Kingman.....	2	0	2	0	0	0	0	0	3	0	12	13
Kiowa.....	0	0	0	0	0	0	0	0	0	0	15	5
Labette.....	0	0	5	0	13	0	0	0	0	0	39	24
Lane.....	0	0	0	0	0	0	0	0	0	0	3	0
Leavenworth.....	0	0	0	0	1	0	0	0	2	0	20	13
Lincoln.....	0	0	1	0	0	0	0	0	0	0	34	11
Linn.....	0	0	0	0	4	0	0	0	0	0	30	19
Logan.....	0	0	0	0	0	0	0	0	0	0	3	1
Lyon.....	0	0	2	0	4	0	4	0	0	0	35	29
Marion.....	0	0	0	0	7	2	0	0	3	0	63	13
Marshall.....	1	0	0	0	1	0	0	0	6	0	54	23
McPherson.....	0	0	1	1	2	0	0	0	0	0	43	14

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.		January.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Births..	Deaths.
Meade.....	0	0	0	0	2	0	0	0	0	0	5	4
Miami.....	0	0	0	0	0	0	0	0	0	0	58	31
Mitchell.....	0	0	0	0	0	0	0	0	1	0	42	6
Montgomery.....	1	0	2	0	4	0	0	0	0	0	54	22
Morris.....	1	0	2	1	7	0	0	0	0	0	23	9
Morton.....	0	0	0	0	0	0	0	0	0	0	2	0
Nemaha.....	0	0	2	0	0	0	0	0	0	0	41	16
Neosho.....	0	0	0	0	2	0	0	0	0	0	62	17
Neosho.....	0	0	1	0	0	0	0	0	0	0	18	4
Ness.....	0	0	0	0	0	0	0	0	0	0	18	7
Norton.....	0	0	0	0	9	0	0	0	0	0	22	22
Osage.....	1	0	0	0	0	0	0	0	0	0	22	4
*Osborne.....	0	0	0	0	0	0	0	0	0	0	18	9
Ottawa.....	0	0	1	0	0	0	0	0	0	0	20	2
Pawnee.....	0	0	0	0	2	0	0	0	0	0	12	4
Phillips.....	0	0	0	0	0	0	0	0	0	0	12	4
*Pottawatomie.....	1	0	0	0	4	0	0	0	2	0	28	13
Pratt.....	0	0	0	0	0	0	0	0	0	0	14	2
Rawlins.....	0	0	0	0	0	0	0	0	0	0	12	0
Reno.....	0	0	0	0	0	0	0	0	0	0	45	15
Republic.....	0	0	0	0	0	0	0	0	0	0	25	20
Rice.....	0	0	0	0	0	0	0	0	0	0	20	11
Riley.....	0	0	0	0	24	2	0	0	0	0	39	17
Rooks.....	0	0	0	0	0	0	0	0	0	0	35	5
Rush.....	0	0	0	0	0	0	0	0	0	0	44	7
*Russell.....	0	0	0	0	0	0	0	0	0	0	19	7
Saline.....	0	0	0	0	6	0	0	0	1	0	28	14
Scott.....	0	0	0	0	0	0	0	0	0	0	4	4
Sedgewick.....	0	0	7	1	0	0	0	0	0	0	6	19
Seward.....	0	0	0	0	1	0	0	0	0	0	48	3
Shawnee.....	0	0	5	0	6	0	0	0	0	0	12	9
Sheridan.....	0	0	0	0	0	0	0	0	1	0	6	3
Sherman.....	0	0	0	0	0	0	0	0	0	0	6	2
Smith.....	0	0	1	0	0	0	0	0	0	0	43	10
*Stafford.....	0	0	0	0	0	0	0	0	0	0	19	7
Stanton.....	1	0	0	0	0	0	0	0	0	0	0	0
Stevens.....	0	0	1	0	4	0	0	0	11	0	6	6
Sumner.....	0	0	0	0	0	0	0	0	0	0	63	21
*Thomas.....	0	0	0	0	0	0	0	0	0	0	6	5
Trego.....	0	0	0	0	0	0	0	0	0	0	6	8
*Wabaunsee.....	0	0	1	0	0	0	0	0	0	0	26	1
Wallace.....	0	0	0	0	0	0	0	0	0	0	1	1
*Washington.....	0	0	0	0	0	0	0	0	0	0	37	23
Wichita.....	0	0	0	0	0	0	0	0	0	0	7	1
Wilson.....	0	0	0	0	11	1	0	0	3	0	51	22
Woodson.....	1	0	0	0	0	0	1	0	0	0	11	12
*Wyandotte.....	0	0	0	0	0	0	0	0	0	0	26	12
Cities:												
Fort Scott.....	0	0	3	0	17	1	0	0	27	1	18	20
Atchison.....	3	0	3	0	0	0	0	0	64	0	20	15
Coffeyville.....	1	0	0	0	2	1	0	0	0	0	40	17
Kansas City.....	16	0	9	0	3	0	3	0	4	0	118	145
Leavenworth.....	0	0	4	0	0	0	0	0	7	0	21	35
Parsons.....	0	0	2	0	12	0	0	0	1	1	25	24
Pittsburg.....	0	0	0	0	3	0	4	0	106	0	48	28
Topeka.....	0	0	18	3	9	0	0	0	5	0	72	95
Wichita.....	0	0	2	0	2	0	0	0	0	0	118	80
†Lawrence.....	0	0	0	0	0	0	0	0	0	0	19	18
†Independence.....	0	0	0	0	0	0	0	0	0	0	22	15
Hutchinson.....	0	0	0	0	6	0	1	0	0	0	42	24

* No report from county health officers.

† Births and deaths reported with cities of first class. Reports from cities over 10,000 population not included in county returns.

DEATHS AND BIRTHS IN KANSAS,

Month of January, 1912.

DEATHS.

Stillbirths not included.		Diseases of liver and adnexa.....	87
Typhoid fever.....	17	Peritonitis.....	3
Smallpox.....	0	Other diseases digestive system.....	41
Measles.....	3	Acute nephritis.....	8
Scarlet fever.....	7	Bright's disease.....	72
Whooping cough.....	9	Other diseases genito-urinary system.....	17
Diphtheria.....	20	The puerperal state.....	25
Dysentery.....	8	Diseases of the skin, etc.....	6
Tuberculosis, all forms.....	111	Diseases of the bones, etc.....	2
Cancer, all forms.....	81	Malformations.....	22
Rheumatism, all forms.....	11	Diseases of early infancy.....	139
Diabetes.....	21	Old age.....	95
Other general diseases.....	63	Suicides.....	19
Meningitis.....	21	Accidents.....	98
Cerebral hemorrhage.....	94	Homicides.....	5
Paralysis.....	32	Ill-defined diseases.....	38
Other diseases nervous system.....	62	Total deaths.....	1,739
Organic heart disease.....	175	Less delayed reports.....	40
Other diseases circulatory system.....	36	Net for January.....	1,699
Broncho-pneumonia.....	87		
Pneumonia.....	137	BIRTHS.	
Other diseases respiratory system.....	54	Males.....	1,700
Diarrhea and enteritis (under 2 years)....	35	Females.....	1,585
Diarrhea and enteritis (2 years and over),	10	White, 8,172.	Colored, 63.
Appendicitis.....	18	Total births, 3,235.	
		Stillbirths, 96.	

AGES AT DATE OF DEATH.

<i>Ages.</i>	<i>No.</i>	SEX.	
-1.....	304	Males.....	920
1-2.....	53	Females.....	819
3-5.....	39	COLOR.	
6-10.....	28	White.....	1,629
11-15.....	26	Chinese.....	1
16-20.....	46	Indian.....	2
21-25.....	52	Black.....	107
26-30.....	69	NATIONALITY.	
31-35.....	59	Native.....	1,448
36-40.....	54	Foreign.....	243
41-45.....	63	Unknown.....	48
46-50.....	57	SOCIAL CONDITION.	
51-60.....	165	Single.....	714
61-70.....	246	Married.....	614
71-80.....	300	Widowed.....	370
81-90.....	149	Divorced.....	14
91-100.....	23	Unknown.....	27
100-+.....	0		
Unknown.....	6		
Total.....	1,739		

Scales, Weights and Measures Condemned.

The weights and measures law went into effect in June, 1903. In July the inspectors of the department were equipped with testing kits, and have since that time tested many thousands of scales, weights and measures.

Many scales were found that could be readily adjusted by a little cleaning or oiling that were not condemned, and many small weights and measures of minor importance were destroyed and no account recorded of such. This is particularly true of the small druggists' prescription weights. Accordingly, only the condemnations that were of sufficient importance to record are herewith presented.

The records of condemnation of over 5000 weights (avoirdupois and apothecaries') are not given in this report on account of lack of space.

(Taken from the records of one of our inspectors, for the year 1910. Per cent condemned are based on total inspected.)

Px. scales passed.....	523	Per cent condemned.
Px. scales condemned.....	195	
Total.....	718	27.1
Counter scales passed.....	439	2.2
Counter scales condemned.....	10	
Total.....	449	
Graduates passed.....	1,320	10.4
Graduates condemned.....	154	
Total.....	1,474	
Counter weights passed.....	3,607	1.6
Counter weights condemned.....	61	
Total.....	3,668	
Px. weights passed.....	6,116	46.7
Px. weights condemned.....	5,362	
Total.....	11,478	
Total inspected.....	17,787	
Total condemned.....	5,782	

SCALES, WEIGHTS AND MEASURES CONDEMNED, July 1, 1909, TO JANUARY 1, 1912.

- J. B. Christinson, Argentine. Open-faced meat market.
- F. W. Sewell, Argentine. Dayton No. 228598 computing.
- W. J. Ritter, Argentine. 1 open-faced meat market.
- Wm. McGeorge, Argentine. 1 px. scale.

- A. B. Schneider, Abbyville. 1 spring dial scale.
Stewart, Abbyville. 1 Simpson counter platform.
J. A. Emmerson, Auburn. Wilmore computing scale.
Dr. L. G. Graves, Atwood. 1 px. scale.
F. R. Town, Athol. National computing, Cleveland.
Dr. D. W. Collins, Arrington. 1 px. scale.
Stephan & Isern Mercantile Company, Alden. 1 Simpson computing, No. 505794.
John Bucher, Andale. 1 Standard computing platform scale, No. 1003239.
T. J. Ritmer, Atchison. 1 prescription scale.
Byrnes Pharmacy, Atchison. 1 px. scale.
J. W. Pilcher, Alton. 1 Stafford scale.
C. E. Allen, Alton. 1 No. 5321 Dayton scale.
Stevens & Co., Alton. 1 Wilmore computing scale.
T. E. Stewart, Alton. National computing scale.
John Mignot, Allen. 1 px. scale.
E. L. Murray, Arcadia. Px. scale.
J. F. Terrass, Alma. 2 weights, px. scale.
Chas. Moore, Arlington. 1 K. C. Arlington, A 1839; 1 platform counter scale.
J. M. Bowen & Co., Atchison. 5 weights; 1 px. scale.
Geo. W. Holland, Barnard. 13 weights; 2 px. scales.
Stotts & Johnson, Bonner Springs. 1 spring scale.
S. L. Shaffer, Bonner Springs. 6 weights, px. scale.
Beloit Grocery and Meat Market, Beloit. 1 Jones scale.
C. W. Stroch, Burrton. Prescription scale.
Cale & Hempstead, Burrton. 1 px. scale.
L. R. Isaac, Bendena. 1 spring scale.
J. P. Severn, Bendena. Scale No. 10258; 1 equal-arm balance scale; computing clock; Wilmore computing scale.
Dr. R. R. Clutz, Bendena. 1 prescription scale; 1 set coin weights.
J. P. Horny, Brewster. 1 standard scale.
L. Henry, Berwick. 1 K. C. scale.
C. L. Stockes, Bushong. 6 weights; 1 px. scale.
E. T. Price, Burlingame. 13 weights; 1 px. scale.
B. H. Crosthwaite, Burlington. 1 px. scale.
C. H. Case, Basehor. 4 weights; 1 px. scale.
J. N. Snodergard, Brookville. Computing scale, No. 51370; 2 weights on platform.
W. D. Benen, Bern. 3 weights; 1 px. scale.
Hulburd Drug Company, Belvue. 6 weights; 1 px. scale.
L. D. Werterm, Coffeyville. Tin measure, bottomless.
R. H. Howard, Coffeyville. Tin measure, bottomless; half-bushel, short.
J. D. Beachtel, Clyde. 1 bottomless peck measure.
J. W. Talbot, Chapman. Half-gallon oil measure.
H. E. Smith & Co., Carlyle. 1 Angledile computing scale, No. 7911.
C. Davis, Courtland. K. C. scale, A 2267.
Schiltz Meat Market, Clay Center. 1 Standard Detroit drum scale.
Tullington & Held, Clay Center. 16 px. weights; 1 px. scale.
Jennings Drug Company, Clay Center. 1 px. scale (block box); 5 weights.
Vernon V. Alonist, Clay Center. 1 Fairbanks; 1 Trumbles; 2 balance scales.

- A. J. Kennwell, Council Grove. 6 weights; 1 px. scale.
W. B. Hunter, Council Grove. 9 weights; 1 px. scale.
F. A. Robbins, Council Grove. 11 weights; 1 px. scale.
H. N. Holcomb, Castleton. 1 counter platform scale, 3-arm, American Cutlery Company.
R. A. Eaton, Colby. 7 weights; 1 px. scale.
J. B. Brown, Chanute. 1 Toledo springless scale, style No. 30, No. 31409.
A. H. Davidson, Chanute. 1 Toledo springless scale.
Shirley & Anderson, Chanute. 1 Dayton computing scale, No. 287282.
Mammoth Grocery, Chanute. 1 Dayton computing scale, No. 287287, condemned for repair.
Bloomheart Bros., Chanute. 5 weights; 1 scale.
W. J. Rosser, Carbondale. 6 weights; px. scale.
B. C. Culp, De Soto. 8 weights; 1 balance.
M. A. Spaulding, Dearing. Prescription scale.
L. Mergberger, Downs. 1 Wilmore computing scale.
J. Roebisch, Downs. 1 Scranton computing scale.
J. L. Middleton, Deerfield. 1 spring dial and scoop; 2-pound scale.
J. W. Wells, Deerfield. 1 John Challon & Son platform scale.
B. A. Roy, Dwight. 3 weights; 1 px. scale.
John Hetzer, Drywood. 1 even-balance scale No. 1.
A. T. Stewart, Denton. 13 weights; 1 px. scale.
O. L. Kinsley, Delphos. 5 weights; 1 px. scale; 1 set metric.
E. R. Holland, Dorrance. National computing scale; 5 weights.
The Delia Drug Company, Delia. 3 weights; px. scale.
Hoffman & Wingerd, Donegal. Computing Scale Company, Dayton, Ohio, No. 31916.
C. W. Gregg, Dennis. 3 weights; Fairbanks balance scale.
John Hetzer, Drywood. Evans balance scale.
Home Merc. Company, Dwight. 3 weights; bottomless measures.
Shoffer & Jenkins, Dwight. Gallon measure; computing scale; 5 weights; confectionery scale.
E. H. Richardson, Effingham. 5 weights; px. scale.
Ebert & Co., Effingham. 5 weights; 1 px. scale.
Thul & Co., Ellinwood. 2 K. C. automatic scale, No. 1916, A2278.
G. M. Jaquiss, Edmond. 1 set px. weights; 1 px. scale.
J. Jenkinson, Esbon. 12 weights; 2 graduates.
F. Seal, agent M. P., Everest. 1 Hanzon Bros. spring scale.
Bushong & Wiley, Everest. Spafford's standard.
D. Wacle, market, Everest. 1 Toledo, style 30, No. 8308.
C. L. Hooper, Emmett. 5 weights; px. scale.
J. B. Eshbach, Emmett. 4 weights; 1 bottomless measure.
W. H. Glynn, Emmett. Vienna scale; 3 weights.
H. Hershberger, Eskridge. 2 bottomless measures.
Sunflower Store, Eskridge. 3 bottomless measures.
W. Grusler, Eskridge. Columbian Postal spring scale; 3 weights.
Mudge Merc. Company, Eskridge. Even-balance Fairbanks scale; 3 weights.
Chas. Wright, Elk City. Prescription scales and weights.
Dr. T. S. Greer, Edgerton. 6 weights; 1 balance.
J. M. Ayres, Edgerton. 8 weights; 1 set metric weights; 1 scale.

- A. E. Jones, Enterprise. Imperial computing scale; 4 weights.
 Froelict Bros., Enterprise. 2 weights; Vienna confectionery 4-pound scale.
 Fleming & Son, Enterprise. 8 weights; px. scale.
 D. O. Krebiel, Enterprise. Reliable computing scale; 3 weights.
 D. H. Kurtz, Fort Scott. 6 weights; px. scale.
 J. E. Rader, Fulton. 5 weights; px. scale.
 Allen & Wade, Fall River. 1 (old, June 2, 1874) scale.
 Pinkapile & Son, Fall River. 1 platform counter scale; Dayton computing scale, No. 38797.
 M. Beadles, Fall River. 1 Imperial computing confectionery; 1 Reliable computing scale; 1 Columbia family scale.
 Lindsborg Mercantile Company, Falun. 5 weights; Trumbull's patent scale.
 F. Trump, Garden City. 1 Dayton computing scale, No. 289430, style 144.
 J. C. Walls, Garden City. 1 Angildile automatic, style No. 13047; 1 small Imperial candy spring scale.
 W. T. B. Herrott, Garden City. 1 Dayton computing, No. 156262.
 L. & M. Mercantile, Garden City. 1 H. Torrence even-balance.
 Cortez & Faust, Garden City. 1 Dayton computing scale, No. 288660; 1 spring Universal computing scale; 1 spring Universal computing scale, Imperial; 1 spring Universal computing scale, Naytron.
 Eichorn Bros., Garden City. 1 Toledo computing scale, style 346, No. 45983.
 E. E. Armstrong, Gardner. 8 weights; 1 px. scale.
 Demley & Fauney, Gardner. 1 peck bottomless measure.
 H. Barrit, Glen Elder. 1 spring scale.
 Arensburg & Culler, Goodland. 7 weights; px. scale.
 Green Drug Company, Green. 23 prescription weights; 1 px. scale.
 Scammon Coal Company, Grass. 1 Simpson scale No. A 1556.
 Thomas Poole, Grainfield. 1 gallon oil measure.
 J. C. Houser, Grainfield. 1 gallon oil measure.
 Wm. Stwits Mercantile Company, Grainfield. Stone measures, one-half-gallon and one-gallon.
 H. & H. Grocery, Great Bend. 1 Dayton computing scale; 3 spring Balium candy; counter platform No. 251792; 6-pound candy scale.
 J. W. Downey, Great Bend. 1 Dayton computing scale, No. 158298; 1 Simpson computing counter platform; 1 spring Balium candy scale.
 McKnown & Hays, Great Bend. 1 automatic, A 2407.
 Lindblade & Nystrom, Great Bend. 1 Dayton computing, 152463.
 W. L. Jenkins, Garden City. 1 spring balance candy scales, Victor; 1 scoop platform iron scale.
 Dugman Brothers, Hanover. 6 weights; 1 px. scale; 1 set metric.
 Kuhlman, Hanover. 19 px. weights; 1 graduate.
 W. F. Ham, Hanston. 1 spring platform scale; Truble No. 1874.
 A. Shook, Hanston. 1 Dayton counter platform computing, No. 26457.
 Murphy Bros., Harper. 1 National computing scale, No. 5291.
 Harper Creamery Company, Harper. 1 px. scale.
 M. J. Silkknitter, Hartland. 1 old platform counter; 1 spring candy scale.
 F. Fleck, Harlan. Toledo scale.
 Wiesner, Hays City. Stamp Computing Scale Co., Detroit, Mich., scale No. 501368; 7 weights.
 Dr. J. A. McManis, Havensville. 5 weights; prescription scale.

- McManis & Richardson, Havensville. 9 weights; 1 px. scale.
J. M. Bell, Haven. 1 Dayton computing scale, No. 96908.
Nichols Drug Company, Herington. 5 apothecaries' weights; 1 px.
C. R. Stevenson, Herndon. 6 prescription weights; 1 px. scale.
A. J. Eicholtz, Highland. 3 weights; 1 set metric; px. scale.
Brokaw & McKnight, Hiawatha. 5 weights; 1 set metric weights; 1 px. scale.
Pedraja Bros., Hill City. 6 px. weights; 1 px. scale.
Eaton & Young, Hillsdale. Fray's improved circular spring scale.
Dr. J. W. King, Hillsdale. 1 weight; 1 px. scale; 1 counter scale.
J. N. Ketchersid, Hope. 10 weights; 1 px. scale.
Tuebbe & Trompeters, Horton. 8 weights; 1 px. scale.
J. F. Manley, Hoyt. 5 weights; 1 px. scale.
Lily White Market, Horton. Dayton computing scale.
W. H. Finley, Holliday. 1 px. scale.
E. A. Richards, Hutchinson. 1 Dayton, old platform scale, computing, No. 23536; 1 spring counter candy scale.
A. Mayberger, Hutchinson. 1 spring candy scale.
Hanson Store, Hutchinson. 1 Dayton computing scale.
H. N. Johnson, Hutchinson. Spring balance candy scale.
C. Miller, Hutchinson. 1 Imperial computing candy scale.
E. A. Richards, Hutchinson. 1 Dayton old counter platform scale; 1 spring counter candy scale No. 23536.
Prentice Bros., Hutchinson. 1 Toledo, style No. 46330.
J. H. Dadsall, Hutchinson. 2 Toledo spring scales, style 346.
J. Keter, Hutchinson. 2 "The Progress" 6-pound spring scales.
Boston Store, Hutchinson. 1 Toledo computing scale, style 245, No. 51159.
D. H. Holliday, Hutchinson. 1 Howe counter platform scale, No. 5198.
John Matheny, Hutchinson. 1 small spring scale. No name.
Joe Snyder, Hutchinson. 1 spring candy scale.
Star Grocery, Hutchinson. The Toledo Scale Company, style 346, No. 64503.
Reno Grocery, Hutchinson. 2 spring scales; 1 Jones arm scale.
N. E. Williams, Hutchinson. 5 pair scales; 1 even-balance, No. 1 Trommer.
F. E. Smith, Hutchinson. 1 Toledo computing, style 346, No. 64503.
J. Smith, Hutchinson. 1 Toledo springless, style 210.
Guyman Petro Mercantile Company, Hutchinson. 1 platform scoop counter scale, No. 602.
Randall Thorcker Mercantile Company, Hutchinson. 1 standard computing counter platform scale; 1 K. C. automatic, No. A 1708.
Lyon Bros., Hutchinson. 1 large K. C. counter scale, automatic, No. A 2223.
E. E. Rule, Hutsville. One arm of the standard computing counter platform scale, No. 11621.
Fulton Market, Hutchinson. Style 346, No. 69143.
W. L. Murray, Jamestown. 1 Dayton computing scale.
H. O. Hardity, Jennings. 12 weights; 1 px. scale.
Downing Pharmacy, Junction City. 5 weights; 1 px. scale.
Brownlee & Stevenson, Junction City. 8 weights; px. scale.
Red Cross Pharmacy, Kansas City. 4 weights; 1 px. scale.
Armourdale Drug Company, Kansas City. 5 weights; 1 px. scale.
Grandview Drug Company, Kansas City. 13 px. weights; 1 px. scale.
W. J. Eppert, Kansas City. 6 weights; 1 px. scale.
C. E. Seaman, Kansas City. 4 weights; 1 px. scale.

- Burns & Finley, Kansas City. 7 weights; 1 px. scale.
 Keefers Pharmacy, Kansas City. 4 weights; 1 px. scale.
 Flag Pharmacy, Kansas City. 11 px. weights; 1 px. scale.
 Green & Elliot, Kansas City. 5 weights; 1 px. scale.
 D. G. Jones, Kansas City. 1 px. scale; 2 sets metric.
 Reitz Bros., Kansas City. 1 scale board, as cheating device if so adjusted.
 H. M. Taylor, Kansas City. 1 scale board, as cheating device if so adjusted.
 W. C. Buck, Kansas City. 1 scale.
 Nelson Bros., Kansas City. 1 computing scale.
 A. S. Prather, Kansas City. 1 open-faced meat scale.
 M. Mertz, Kansas City. Nation computing scale.
 M. Barrett, Kansas City. 1 computing scale.
 Theo. Shaffer, Kansas City. 1 open-faced spring scale.
 J. C. Fusher, Kansas City. 3 Butcher's Supply Company.
 Armour Packing Company, Kansas City. 5 scales.
 E. M. Kampuveier, Kansas City. Computing Dayton scale, No. 40793.
 J. H. Shoemaker, Kansas City. 1 computing scale.
 J. B. Gilbert, Kansas City. National scale, No. 81068.
 Nelson Brothers, Kansas City. National computing scale.
 H. Kulker, Kansas City. Computing scale, Dayton.
 Robert Grocery, Kansas City. Computing scale (no name).
 C. Hall, Kansas City. Anderson computing scale.
 E. G. Gube and A. B. Glenn, Kansas City. Dayton computing spring; 1 quick balance.
 H. M. Taylor, Kansas City. 1 pound weight; 1 scale.
 Peak Bros., Kansas City. Counter scale.
 W. A. Griswold, Kansas City. 1 Dayton computing scale.
 I. L. McIntire, Kansas City. 1 scale.
 W. W. Barlow, Kansas City. 2 weights; 1 Dayton computing scale.
 Alexander Silverman, Kansas City. 1 Kotch butcher spring scale.
 J. Bukaty, Kansas City. 1 Simpson computing scale.
 T. H. Kamfield, Kansas City. Kotch butcher spring scale.
 Frank Price, Kansas City. 1 National computing scale.
 Nickols Store, Kansas City. 1 scale.
 Chatilon & Son, Kansas City. Spring scale.
 Miller Bros., Kansas City. 1 Fairbanks platform scale.
 John Carr, Kansas City. 1 Dayton computing scale.
 J. Stazer, Kansas City. National computing scale.
 J. T. McOwen, Kansas City. 1 Fairbanks scale; 1 Columbia spring scale.
 S. Nickerson, Kansas City. 1 Fairbanks scale.
 Hescher & Weber, Kansas City. 1 American Cutlery Company scale.
 Muller Bros., Kansas City. 1 computing scale.
 Inter-City Grocery, Kansas City. 51 bottomless measures.
 James M. Hall, Kansas City. Open-face scale.
 P. J. Broll, Kansas City. 1 set standard computing quick balance.
 McHale, Kansas City. 1 Fairbanks; 1 open-face meat scale; 3 weights.
 William Frederick, Kansas City. 1 open-face scale.
 W. A. Green, Kansas City. 3 stovepipe measures.
 Inter-City Grocery, Kansas City. 19 sets bottomless measures.
 Geo. Gilleland, Kansas City. 1 open-face scale.
 M. C. Blading, Kansas City. 1 automatic computing scale, No. 6132.

- Lewis & Clark, Kansas City. 1 computing scale.
Glatz Bros., Kansas City. 1 open-face meat scale.
Cockran & Son, Kansas City. Open-face scale in retail market; open-face scale in wholesale market.
D. E. Fries, Kansas City. 1 Toledo scale.
McCollom, Kansas City. 1 scale.
F. M. Robb, Kansas City. 2 px. scales; 22 weights.
Mrs. S. J. Crawford, Kanopolis. 1-peck bottomless measure, $\frac{1}{2}$ -peck and $\frac{3}{4}$ -peck.
Gomer & Simpson, Kirwin. 1 Fairbanks.
A. E. Jones, Kelso. 7 weights; $\frac{1}{2}$ -gallon and 1-gallon measures.
F. A. Orr, Kansas City. 7 weights; 1 px. scale.
James Benebdge, Keats. 1 px. scale; 14 px. weights.
E. W. Schweitzer, Kelly. 1 Boston computing scale.
Dr. L. A. Golden, Kensington. 10 weights; 3 metric; 1 px. scale.
Hamilton Bros., Kirwin. 1 balance scale.
Cookson Drug Company. Kingman. 6 weights.
McCune & Johnston, Kinsley. 1 Dayton computing scale, No. 288637.
Edwards Company, Kinsley. 1 Dayton computing scale, No. 18712.
Kinsley Mercantile Company, Kinsley. 1 spring balance scale.
M. T. Parks, Larned. 1 K. C. automatic scale, No. A2406.
W. H. Avery, Larned. 1 Dayton computing scale, No. 172542.
People's Meat Market, Larned. 1 K. C. automatic, No. 2290.
H. A. Andress, Larned. 1 unequal-arm balance scale.
W. H. Broadwell, La Cygne. 4 weights; 1 px. scale.
F. Shudrawitz, Lansing. 10 weights; 1 scale.
J. A. Swarm, Lansing. 1 Troy weight; 1 set metric weights; 1 px. scale.
C. Campbell, Lansing. 1 National computing scale, No. 8991.
J. O. Holloway, Lawrence. 1 px. scale; 1 set brass weights.
F. B. McCollact, Lawrence. 1 px. scale; 6 weights.
T. H. McCurdy, Lawrence. 1 bottomless measure.
J. A. Spaulding, Lawrence. 2 weights; 4 bottomless measures.
Mullany & Houser, Lawrence. 1 Dayton computing scale, No. 203232.
Eden & Eden, Lawrence. 1 dial; 3 weights.
Mehl & Schott, Leavenworth. 32 px. weights; 1 px. scale.
Cleverdon Bros., Leavenworth. 2 weights; 1 px. scale.
Newman Bros., Leonardville. 1 px. scale; 5 px. weights.
Arbuthnot Drug Company, Lebanon. 7 weights; 1 px. scale.
Leonhard Bros., Leona. 7 weights; 1 px. scale.
Lenore Produce Company, Lenore. 1 platform scale.
Broch Bros., Lenore. 1 spring scale.
W. H. Sukes, Leonardville. 1 standard computing scale.
Rabech Mercantile Company, Le Loup. Candy scale, spring balance.
W. N. Kilsey, Linwood. 3 weights, 1 px. scale.
Huey & Co., Louisville. 3 weights, 1 bottomless measure.
J. L. Sarek, Logan. 1 K. C. computing scale.
Dougherty & Son., Logan. 1 Fairbanks small equal-arm balance scale.
Downe Drug Company, Logan. 20 px. weights; 1 px. scale.
W. S. Foster, Long Island. 5 weights; 1 set metric; 1 px. scale.
Miles Bros., Lyndon. 15 weights; 1 px. scale.
J. B. Ira & Son, Lyndon. 1 px. scale.

- H. S. Willard, Manhattan. 17 weights; 1 px. scale.
 G. B. Harrop, Manhattan. 1 px. scale; 1 counter scale.
 Dr. L. Atwood, Meriden. 9 weights; 1 px. scale.
 G. W. Grubs, Meriden. 1 standard computing scale, No. 1861; 1 scale, No. 11834.
 Heberly Drug Co., Minneapolis. 5 px. weights; 1 px. scale.
 Dr. I. H. Buel, Mapleton. 4 weights; 1 px. scale.
 I. F. Morlatt, Mapleton. 1 K. C. automat c.
 M. Barrlow, Marysville. 1 Howe small balance scale.
 Gran & Erick, Marysville. 1 spring open-faced scale.
 R. L. Birkett, Mayetta. 9 weights; 1 scale.
 Ostberg & Johnson, Marquette. Simpson No. 70, Detroit, Mich.; 7 weights.
 C. E. Ellerson, Marquette. 50 weights made of lead.
 L. Pihlblad, Marquette. Even-balanced scale; 2 weights.
 Whitelock, Manhattan. 2 weights; 1 dial computing scale.
 Candy Kitchen, Manhattan. Old Imperial computing scale; 3 weights.
 U. S. Stewart, Minneapolis. 1 K. C. scale, No. 2301.
 J. E. Ewart, Minneapolis. 1 Simpson computing scale.
 Dr. M. McNally, Michigan Valley. 14 weights; 1 px. scale.
 Henry Fey, Mount Hope. 1 Dayton computing counter platform scale, No. 45250.
 J. E. Fishbach, Mount Hope. 1 Simpson counter platform scale.
 J. I. Sheets, Mount Hope. 4 weights; 1 px. scale.
 Calvin & Company, Morland. 4 weights; 1 px. scale.
 Dr. J. N. Rogers, Marion. Scales and weights.
 Morganville Mercantile Company, Morganville. 1 Toledo scale.
 W. H. Lennard, Morganville. Elkhart Simpson scale, No. 471.
 Stone Mercantile Company, Muscotah. Premier computing scale, Detroit, Mich.
 P. F. Lambek, Navarre. Spring scale; 5 weights.
 Wingell & Hoffman, Navarre. Imperial Confectionery Scale Company.
 W. C. Johnson, New Albany. 1 Dayton computing scale, No. 80577.
 S. C. Blake, New Ulysses. 1 Protection scale.
 New Ulysses Mercantile Company, New Ulysses. 1 Buffalo scale.
 D. W. Shirley, Nickerson. 1 24-pound spring scale.
 C. F. Propes, Nickerson. 1 spring scale.
 Julius Frisch, Nickerson. 2 spring scales.
 B. W. Harrison, Norton. 1 scale; 1 set metric weights.
 J. W. Nagar, Norcatur. 1 px. scale.
 Griffin & Son, Nortonville. 14 weights; 1 px. scale.
 Geo. J. Dexter, Oak Hill. 1 Howe computing scale.
 Otis Anderson, Oakley. 1 measure.
 L. L. Moore, Oakley. 1 quart measure.
 Theo. Weichbaum, Olsburg. Wilmore Computing Scale Company, 6 weights.
 J. E. Samuelson, Olsburg. Simpson computing scale.
 Dr. J. W. Lauck, Olsburg. 3 px. weights; 1 px. scale.
 G. P. Trotter & Son, Olathe. Fairbanks platform counter scale.
 Shinn & White, Olathe. Koch Butcher Supply Company spring scale.
 Dick Weaver, Olathe. 2-pound scale.
 O. C. Anderson, Oskaloosa. 9 px. weights; 1 px. scale.
 J. H. Morran, Oskaloosa. Green, No. 255071; Simpson.

- Arthur C. Brown, Osage. 9 weights; 1 px. scale.
 A. C. Rosser & Co., Osage. 11 weights; 1 px. scale.
 J. E. Youngberg, Ottawa. 1 px. scale.
 A. R. Inglman, Overbrook. 11 weights; 1 px. scale.
 J. A. Statler, Ozawkie. 7 weights; 1 px. scale.
 C. N. Emery, Paola. Computing scale.
 W. T. Potts, Paola. 1 platform counter scale.
 Baehr Bros., Paola. 1 Angldile computing scale, No. 7559.
 C. C. Boxley, Paola. 1 small 5-pound tea scale.
 McKoon & Wishroop, Paola. 1 K. C. scale, No. 1541.
 Dr. C. E. Barber, Palco. 1 weight; 1 px. scale.
 J. M. Young, Parsons. 5 weights; px. scale.
 O. L. Evans, Parsons. 1 Standard Detroit, Mich., computing, No. 8791.
 Baldridge & McDonald, Parsons. 1 Toledo scale, style 346, No. 6482'.
 I. N. Davis, Parsons. 1 Dayton computing scale, No. 166662.
 J. F. Bonner, Parsons. 1 Simpson computing scale, No. 10288.
 Bartlett Mercantile Company, Parsons. 1 Perfection scale.
 J. H. Nuttman, Palco. 2 weights; 1 px. scale.
 Fred Hess, Palco. 7 weights; 1 set metric; 1 px. scale.
 Breit, Pfeifer. Standard computing scale.
 J. L. McCormick, Phillipsburg. 16 weights; 1 px. scale.
 Geo. Ulrich, Piqua; 1 Howe No. 7823 platform counter.
 Dr. J. J. McColman, Piper. 3 weights; 1 px. scale.
 W. W. Jones, Piedmont. 1 spring scale.
 United Drug Company, Pleasanton. Prescription scales.
 C. R. LeBar, Powhattan. 6 weights; 1 px. scale. Troy weights, prescription scale.
 Dr. G. A. Van Driest, Prairie View. 7 weights; 1 px. scale.
 Early Carder, Quenemo. 10 weights; 1 px. scale.
 M. R. Holloway & Co., Quenemo. 12 weights; 1 px. scale.
 A. Wickander, Randolph. 1 equal-arm balance.
 Newman Bros., Randolph. 4 weights; 1 px. scale.
 C. E. Show, Raymond. 1 platform.
 C. C. Steele, Reserve. 6 weights; 1 px. scale.
 Milton Printer, Riley. 10 weights; 1 px. scale.
 Dean Cash Store, Richfield. 1 Buffalo scale.
 A. W. Carson, Richland. 8 weights; 1 px. scale.
 Albert Neese, Richland. Vienna confectionery scale; two-gallon measure.
 Zircle Bros., Richland, 2 one-gallon oil cans.
 W. Secrest, Rosedale. 1 peck and one-half peck bottomless measures.
 C. Leavengood, Rosedale. 4 weights; 1 px. scale.
 Geo. Gernew, Rosedale. 1 Simpson computing scale, No. 46.
 C. W. Finke, Rosedale. Open-face scale.
 D. Hartzell, Rossville. 6 weights; px. scale.
 Rock Creek, Rock Creek. 6 weights; 1 px. scale.
 Henry Ebel, Russell. $\frac{1}{2}$ -gallon measure.
 G. E. Dunn, St. Francis. 2 weights; 1 px. scale.
 Stenger & Sons, St. Marys. Dayton computing scale; 5 weights.
 Harrison & Shrine, St. Marys. 1-gallon measure; 14 weights.
 Sterling & Hozen, Stockton. 1 spring meat scale.
 A. E. Hinkle, Sabetha. Computing arm platform scale, No. 17440.

- Youngs Grocery Company, Sabetha. 1 Howe even-balance; 4 weights.
 Nesmith & Son, Salina. 1 Dayton counter computing scale, style 144, No. 279407.
 Lindemon Bros., Salina. 1 Angldale.
 Theo. Graustell, Scandia. 1 Standard Detroit, No. 10282.
 W. W. Rhodes, Scottsville. 1 Kansas City scale, No. A 1897.
 Gardner Mercantile Company, Scranton. Even-balance.
 G. W. Springer, Severance. 1 Simpson computing, No. 25081.
 Dr. J. Shaffer, Simpson. 1 px. scale; 1 set prescription weights.
 Simpson Mercantile Company, Simpson. 1 computing scale, No. 42462.
 Diamond Warble & Son, Smith Center. 7 px. weights; 1 px. scale.
 M. R. Jeness, Solomon. 11 weights; 1 px. scale; 1 candy scale.
 Carlin & Supple, Solomon. 12 weights; 1 px. scale.
 A. & H. G. Herring, Sparks. 5 weights; 1 px. scale.
 Sharon Springs Mercantile Company, Sharon Springs. 1 cup measure.
 Geo. Cox, Sharon Springs. Cup measure.
 N. R. Norton, Sunnyside. American family scale; 2 weights.
 W. B. Wershing, Sterling. 1 K. C. automatic counter scale, No. A 1540; 1 Fairbanks platform scale.
 Dillon & Brunn, Sterling. 1 K. C. automatic counter scale, No. A 1339.
 M. P. Shoak, Sterling. 1 Dayton computing scale, No. 215087.
 C. Hawkins, Sterling. 1 K. C. automatic scale, No. A 2060.
 D. G. Evans, Sterling. 1 small spring balance scale.
 Ballette & McKinnis, Stockton. 1 Wilmore computing scale.
 A. A. Coddington, Stickney. Columbia family scale; 4 weights.
 Campbell & Winship, Syracuse. 1 Simpson, No. 70.
 R. E. N. Bray, Syracuse. 1 Howe scale.
 J. B. Miller, Syracuse. 1 uneven-arm balance.
 Molmgreen-McLivy, Sylvia. 1 Dayton computing, No. 152367.
 B. L. Gaston, Sylvia. 1 Stimpson, No. 502118.
 H. Waddles, Sylvia. 1 Stimpson, No. 25212.
 Dr. S. N. Chaffee, Talmage. 2 weights; 1 px. scale.
 C. D. Wiggins, Topeka. Cup measure.
 Sam Cunningham, Topeka. Liquid measure.
 E. Houser, Topeka. 1 peck bottomless measure.
 Fred Walker, Topeka. 8 weights; 1 counter scale.
 Chas. W. Kohl, Topeka. 2 weights; 1 px. scale.
 Frank Hobart, Topeka. 1 px. scale; 11 weights.
 Fred Snow, Topeka. 8 weights; 1 px. scale.
 A. O. Noel, Topeka. 6 weights; 1 px. scale.
 F. G. Corbin, Topeka. 6 weights; 1 px. scale.
 Alex. Gibbs, Topeka. 17 weights; px. scale.
 H. C. Martin, Topeka. 5 weights; 1 px. scale.
 Capital Pharmacy, Topeka. 1 set metric weights; 10 weights; 1 px. scale.
 W. D. Woodford, Topeka. 4 weights; px. scale.
 S. W. Durant, Topeka. 3 weights; 1 px. scale.
 Campbell Drug Company, Topeka. 5 weights; px. scale.
 Marshall Bros., Topeka. Px. scale.
 Campbell Drug Company, Topeka. 1 px. scale.
 Zeller Mercantile Company, Tonganoxie. 1 National computing scale.
 Halstead & Halstead, Tonganoxie. 1 computing scale.

G. K. Elston, Tonganoxie. 1 spring balance.
 T. J. Dessery, Tonganoxie. 1 Fairbanks.
 Geo. McLaren, Troy. 8 weights; 1 px. scale.
 Doran & Doran, Tein Mound. Scales.
 C. W. Rankin, Wakefield. 2 weights; 1 px. scale.
 Spence & Vincent, Wakefield. 2 weights; 1 px. scale.
 Dr. J. C. Mitchell, Waldo. 10 px. weights; 1 px. scale.
 M. Glaser, Waterville. 1 Fairbanks.
 C. C. Kalbrook, Waterville. 1 equal-arm balance scale.
 John Parsons, Waterville. 1 weight; Trumble scale.
 Jacob Miller, Wathena. 1 px. scale.
 A. P. McMillan, Wamego. 7 weights; 2 one-gallon cans.
 H. C. Funsey, Wamego. 50-pound weight; platform scale.
 E. J. Fisher, Wamego. 1-gallon measure.
 Osmer & Johnson, Wabaunsee. Counter scale.
 J. S. Fitzgerald, Wetmore. 7 weights; 1 px. scale.
 J. T. Pendell, Wellsville. 11 weights; 1 px.
 Robinson Bros., Westmoreland. Turnbull patent 32 scale; 4 weights.
 M. F. Moore, Westmoreland. 1 px. scale.
 Swickard Market, Wheaton. 1 computing scale.
 H. H. Bushey, Wheaton. 1 computing scale.
 City Meat Market, Wheaton. 1 computing scale.
 Ingalsby & Bushby, Wheaton. 1 K. C. Supply Company, No. A 1859.
 R. J. Herhold, White City. 7 weights; 1 px. scale.
 Manck & Son, White Cloud. 1 Standard computing.
 Johnson Bros., Winfield. 1 Dayton computing scale.
 B. F. White, Winfield. 1 Angldile scale, No. 5318.
 T. E. Wathes, Winfield. 1 Home scale.
 W. H. Berger, Wilson. 1 gallon measure.
 L. Egel, Winfield. Scales.
 — Murphy, Wichita. 4 weights; 1 px. scale.
 W. M. Swentzell, Wichita. 1 set wood box scales.
 J. A. Coulter, Topeka. Bottomless peck measure.
 Wm. H. Johnson, Zenith. 1 K. C. automatic, No. A 1875.
 R. J. Phillips, Woodston. 1 K. C. scale.
 — Bacon, Yates Center. Prescription scales.

The Cash Store, Axtell. Quart measure; pint measure.
 F. M. Gaylord, Axtell. Gallon measure; quart measure.
 E. H. Sechrist, Ada. 1 meat scale.
 Hurlbut Mercantile Company, Axtell. 1 quart measure.
 T. Lancaster, Atchison. 1-peck, $\frac{1}{2}$ -peck and $\frac{1}{4}$ -peck bottomless measures.
 Austin-Hollandsworth Mercantile Company, Belleville. 1 gallon measure.
 John Gibbs, Barnard. 1 Dayton scale.
 J. W. Seldon, Bigelow. 1 quart measure.
 Geo. T. Oliver, Burlingame. 1 5-pound scale.
 F. R. Walker, Bonner Springs. 1 Dayton meat scale.
 B. L. Swofford, Bonner Springs. 1 Reliable computing scale.
 Hudson & Co., Baxter. 1 equal-arm scale.
 R. J. Bunton, Burlington. 2 scales; 6 weights.

- D. W. Rainey, Bucyrus. 1 spring balance computing scale, Reliable.
- R. H. Hooper, Bush City. 1 Toledo Springless, style 30, No. 35359.
- A. B. Brunfield, Belpre. 1 National computing platform scale.
- Conners Mercantile Company, Burr Oak. 1 Kansas City automatic scale, No. A 2901.
- D. Carmichail, Burrton. 1 Angledile counter platform.
- C. B. Heinrichs, Burrton. 1 Buffalo counter platform; 1 Imperial computing candy scale.
- J. L. Siceloff, Belle Plaine. 1 Toledo scale, No. 45342, style 345.
- E. W. Clark & Co., Centralia. 1 Stimpson computing scale.
- C. W. Granger, Centralia. 1 computing scale, Computing Scale Company.
- J. W. Garrell, Centerville. 1 Kansas City scale, No. 1956.
- Johnson & Co., Cleburne. 1 quart measure.
- R. T. Williar, Chiles. 1 Invincible spring balance (4-pound) scale.
- O. O. Colow, Coffeyville. 1 px. scale.
- J. P. Turner, Colony. 1 Stimpson computing scale, No. A 3264.
- McDown & Lasater, Colony. 1 counter platform scale, old Fairbanks.
- C. P. Miller, Carbondale. 1 gallon measure.
- Carl Fisher, Cassoday. 1 New Anderson automatic scale, No. 7890.
- G. F. Clark, bakery; Caldwell. 1 scale, S. W. Nagle, Kansas City, Mo.
- C. L. Soule Mercantile Company, Clements. 1 Toledo, springless, No. 37916; 1 spring balance candy scale, Majestic.
- Wetherall Bros., Cunningham. 1 Stimpson computing scale, No. 501266.
- Boerner & Troutfelter, Colby. National computing scale, No. 18665.
- Fred A. Wertz, Colby. Computing Scale Company scale, No. 74823.
- Bryan & Co., Delia. Stimpson computing scale, No. 250313.
- P. M. Imel & Son, Dodge City. 1 Loose-Wiles spring balance candy scale; 1 National computing balance.
- Frank G. Barkley, Dodge City. 1 Imperial spring balance candy scale; 1 Stimpson counter platform scale, No. 70.
- Argabright & Sidlow, Dodge City. 1 Dayton computing scale; counter platform.
- Sweet Mercantile Company, Dodge City. 1 Loose-Wiles spring balance; 1 Stimpson computing scale, No. 70.
- Burnett Bros., Dodge City. 1 Stimpson computing counter platform, No. 501174.
- John Gissel & Son, Dodge City. 1 4-pound candy scale.
- R. M. Show, Dwight. 1 counter platform scale.
- G. W. Ulth Lumber Company, Harper. 1 Toledo scale.
- Hubbard & Beatty, Duquoin. 1 Kansas City scale, No. A 2795.
- The Dillwyn Mercantile Company, Dillwyn. 1 Angledale springless, style F, No. 4888; 2 spring scales.
- A. M. Walker, DeSoto. 1 spring hanging meat scale.
- Shafer & Jenkins, Dwight. 1 Dayton platform computing scale, No. 29889.
- Geo. C. Carle, Florence. 1 wagon scale.
- Eudora Department Store, Eudora. 1 Stimpson No. 70, No. 505930.
- J. A. Ledwicky, Everest. 1-peck, $\frac{1}{2}$ -peck and $\frac{1}{4}$ -peck measures.
- B. O. Bennie, Effingham. 1 gallon measure.
- W. S. Harman, Effingham. 1 gallon measure.
- Heleker Brothers, Frankfort. Dry quart measure.
- The Star Grocery, Frankfort. 2 measures.

- Wm. Holtham, Frankfort. 2 bottomless measures.
 H. Westphal, Ellis, 1 hanging meat scale.
 Lombs Dry Goods Company, Florence. 1 Wrigley's gum scale; 1 Imperial spring scale.
 H. Miller, Fredonia. 1 scale.
 J. J. Shevens, Elbing. 1 Perfection spring scale.
 Baker & Stevens, Erie. 1 Wilmore computing scale.
 Eudora Department Store, Eudora. 1 Stimpson No. 70, No. 505930.
 Johnson County Coöperative Association, Gardner. 1 hanging spring balance meat scale.
 Dockum & Whitaker, Garden City. 1 wagon scale.
 A. W. Hornbeck, Great Bend. 1 Fairbanks scale.
 Horn Brothers, Gardner. 1 Dayton computing scale, old, No. 170601.
 A. C. Terror, Garnett. 1 scale, No. 4089.
 J. E. Smith, Girard. 1 Traveler equal-arm.
 F. F. Gregg, Girard. 1 Dayton computing.
 James A. Ayres, Greenleaf. Measure, dry quart.
 A. L. Tooley, Greenleaf. Measure.
 J. Atkinson, Greenleaf. Measure, dry quart.
 P. Martin, Greenleaf. Dry quart measure.
 N. S. Flock, Blue Rapids. Dry quart measure.
 Woodford Mercantile Company, Greenleaf. Dry quart measure.
 Grant Hankins, Grenola. 1 Dayton scale.
 R. L. Lawrence Co., Garden City. 1 wagon scale.
 T. J. Harrold, Iuka. 1 Strubler computing scale, No. 5745.
 Woodward Brothers, Haviland. 1 Stimpson computing scale, No. 8974.
 L. A. Rardin, Hiawatha. 1 equal-arm Strubler scale.
 N. E. Williams, Hutchinson. 1 even-balance scale.
 H. Dohrman, Hudson. 1 Stimpson computing scale.
 R. C. Ferguson, Halstead. 1 spring balance dial computing scale.
 D. D. Wagoner, Hartford. 1 Hanson Brothers spring balance scale.
 Sarbach Store, Holton. 1 Stimpson scale.
 H. Summing, Holton. 4-gallon measure.
 Braley & Soldner, Horton. 1 Standard computing scale, No. 3 Premier.
 I. G. Lawrence, Howard. 1 Howe scale, No. 2691.
 E. H. Langeman, Home. 1-quart measure; $\frac{1}{2}$ -gallon measure.
 Frank Stehk, Home. 1-quart measure.
 Frank Thompson, Irving. 1-quart measure.
 Berry & Alford, Hutchinson. 1 K. C. scale.
 A. A. Weisner, Hays. 1 Stimpson computing scale, No. 501368.
 Burgess Pulley, Larned. 1 wagon scale.
 C. W. Smith Ice Company, Larned. 1 wagon scale.
 Lindas Lumber and Coal Company, Larned. 1 Howe platform scale. †
 M. E. Lee, Larned. 1 Howe platform scale.
 G. L. Priestly, Lawrence. 1 Stimpson No. 46, No. 252162.
 W. H. Schell, Lawrence. 1 spring balance scale.
 G. M. Lindley, Lawrence. 2 spring balance scales.
 John Shields, Lawrence. 1 Stimpson scale, No. A1809.
 W. W. Krug, Larkinburg. 1-gallon measure.
 C. H. Gober, Loring. 1 counter platform scale.

- M. L. Jolley, Longton. 1 Toledo scale.
- C. F. Moorehead, Kechi. 1 Stimpson scale, No. 24435.
- T. Z. Nester, Lone Elm. 2 Harson Brothers spring scales.
- Fredrick & Bowen, Linwood. 1 hanging spring balance meat scale.
- Will Johns, Lawrence. 1 spring balance meat scale.
- Byron Jones, Lawrence. 1 counter platform meat scale.
- J. S. Schleifer, Lawrence. 1 Kansas City automatic counter platform, No. A 1944.
- Chas. Thudium, Lawrence. 1 platform meat scale.
- T. V. Edmonds, Lawrence. 1 platform meat scale.
- Frank W. Horsford, Lawrence. 1 Stimpson No. 70, No. 505793; 1 hanging spring balance.
- Wilgus Mercantile Company, La Cygne. 1 meat computing scale.
- Ray Brothers, Lewis. 1 Stimpson computing scale, No. A 1769.
- The La Cygne Mercantile Company, La Cygne. 1 Dayton counter computing scale, No. 167219.
- M. L. Jolley, Longton. 1 Toledo scale.
- McDonald Grocery, Longton. 1 Howe scale.
- H. Blockberger, Leavenworth. 1 hanging meat scale.
- O. Prather, Leavenworth. 1 hanging spring meat scale.
- J. D. Galvin, Leavenworth. 1 hanging spring balance scale.
- Samisch Brothers, Leavenworth. 1 hanging spring balance meat scale.
- J. C. Jones, Kanorado. 1 Stimpson Scale Company computing scale.
- H. Blockberger, Leavenworth. 1 hanging spring scale.
- The Union Pacific Tea Company, Leavenworth. 1 even-balance scale.
- H. R. Callen, Leoti. 1 Butcher's Supply Company scale, No. 16408.
- T. M. Logan, Mankato. 1 computing scale, No. 47231.
- D. G. Smith & Co., Mankato. 1 K. C. automatic scale.
- David Ansell, McPherson. 1 Stimpson computing scale, No. 501509; 1 spring balance candy scale.
- V. L. Olson, McPherson. 1 "Elkhart" Stimpson computing scale, No. 31295.
- Stephen & Snyder, McPherson. 1 Stimpson computing scale, No. 502119.
- F. D. Entricken, McPherson. 1 Dayton computing scale, style 144, No. 277133.
- R. C. Strohman, McPherson. 1 Stimpson scale, No. 502688; 1 Reliable spring balance.
- Nelson Johnson Company, McPherson. 1 Wilmore scale; 1 dial spring; 1 uneven-balance, Howe.
- Lindbloom & Roseburg, McPherson. 1 Stimpson computing, No. 501297.
- A. D. Howe, Matfield Green. 1 Stimpson computing scale, No. 60216.
- E. L. Hough, Matfield Green. 1 K. C. spring butcher's scale, No. 5125.
- The Grand Mercantile Company, Marion. 1 Dayton computing, No. 233735.
- Richardson Brothers, Marion. 1 Dayton computing scale, No. 213176.
- W. A. Remmers, Marion. 1 Dayton scale, No. 202844.
- E. Williams, Marion. 1 Toledo computing scale, style 346, No. 66700.
- J. R. Ash & Son, Milan. 1 National scale.
- Smith & Jones, Morse. 1 Stimpson computing scale, No. 700136.
- E. J. Rogers, Morse. 1 Stimpson computing scale, No. 700317, style 75.
- A. J. Jones, Mayetta. 1-gallon measure.
- V. R. Lungert, Mayetta. 1 small spring scale, marked "Merrick's Spool Cotton, Chicago."

- S. Heyman & Son, Mayetta. 1-gallon measure.
T. Pearson, Meriden. 2-gallon measure.
J. W. Moser, Meriden. 1 Standard computing scale.
C. L. Crow & Co. 1 Pelouze spring balance.
Wise Brothers, Mound Valley. 1 Tromer scale; 1 Dayton scale.
Schultz Brothers, Manhattan. 1 hanging spring meat scale.
Peak Brothers, Manhattan. 1 platform meat scale.
Beattie & Haid, Manhattan. 1 Dayton hanging computing meat scale.
J. J. Smith, Marysville. 1 dry quart.
Hohn & Sons, Marysville. 3 dry measures.
A. Arand & Son, Marysville. 1 dry quart; 1 dry pint.
E. G. Draheim, Marysville. 1 liquid quart.
M. Barlow, Marysville. 1 liquid quart.
Bull Brothers, Marietta. 1 dry pint; 1 dry quart.
F. L. Hinds, Offerle. 1 spring counter dial scale.
W. H. Bates, Natoma. 1 Stimpson computing scale, No. 0385.
A. Griffith, Ozawkie. 1 equal-arm balance scale.
J. L. Byler, Newton. 1 Jones counter platform scale.
Joseph Steinkirchner, Newton. 2 platform counter meat scales.
R. F. Buzbee, Onaga. 1 Anderson automatic scale.
G. W. Young, Newton. 1 New Dayton, No. 182024.
Peter Parks, Newton. 1 counter spring meat scale.
H. C. Anderson, Newton. 1 Dayton counter platform scale, No. 73441.
S. J. Rohrer, Newton. 1 Kansas City automatic, No. 1966.
W. J. Tatman, Oatville. 1 Fairbanks scale.
Johnson County Coöperative Association, Olathe. 1 national computing;
1 spring balance candy scale; 1 Perfection spring balance.
John Myers; Neosho Falls. 1 Stimpson scale.
Root & Hodge, Oketo. Dry pint; dry quart in sets.
J. E. DeLair, Oketo. 1 liquid pint used for dry measure.
Van Womer Craig Company, Osborne. 1 Stimpson computing scale.
E. S. Jenkins, Perry. 1 scale.
E. M. Jones, Quincy. 1 National computing scale.
R. R. Harper, Potwin. 1 Dayton hanging spring computing, No. 62873.
H. C. Graham, Pittsburg. 1 scale.
West Grocery, Pittsburg. Tromer equal-arm scale.
W. R. Popkess, Powhattan. 1 gallon measure.
R. R. Smith, Powhattan. 1 gallon measure.
J. A. King, Quincy. 1 Stimpson scale.
George Gerner, Rosedale. 1 gallon measure.
Rock Creek Mercantile Company, Rock Creek. 1 Stimpson computing scale.
Golden Rule Store, Robinson. 1 gallon measure.
C. H. Beckman, Randolph. 1 Dayton computing scale.
E. R. Burnett, St. John. 1 Toledo scale.
Shawnee Grocery, Topeka. 1 liquid measure being used in onion sets.
R. W. Nelson, Summerfield. 1 cup used for quart in sets.
M. McDonald, Summerfield. 1 cup used in onion sets for quart.
W. O. McCurdy, Sitka. 1 K. C. scale, No. 1381.
Swan & Co., Spivey. 1 Toledo scale.
Brown Brothers, Stafford. 1 National computing scale.

- Henry Brothers, Stafford. 1 National computing counter platform scale, No. 18795.
- M. D. Anderson, Stafford. 1 Standard computing scale.
- J. J. Buser, Stafford. 1 peck bottomless measure.
- W. B. Wirshing, Sterling. 1 K. C. automatic counter, No. A 1540; 1 Fairbanks platform counter; 1 Hanson Bros.' spring balance; 1 Douglas & Son spring balance.
- H. Blatherwick, Salina. 1 hanging meat scale.
- Edwards & Nichols Co., Spearville. 1 Stimpson computing scale, No. 501202; 1 Angledile, No. 2558.
- J. B. Bartlett, Tonganoxie. 1 hanging meat scale.
- H. W. Covington, Valley Center. 1 scale, Anderson automatic, No. 7035; 1 L. W. spring candy scale.
- J. C. Mauney, Topeka. 1 Anderson computing scale.
- Topeka Fish & Oyster Co., Topeka. 1 hanging fish scale.
- J. H. Watkins & Son, Tescott. 1 hanging meat scale, No. 50383.
- J. C. Stewart & Son, Weir. 1 computing scale.
- J. H. Stewart & Brother, Wathena. 1 liquid quart measure used in onion sets.
- H. C. Jones, Washington. 1 gallon measure.
- W. A. Archer, Wilmot. 1 Stimpson scale.
- L. L. Fitzsimmons, Westphalia. 1 Dayton scale.
- J. B. Christenson, Argentine. 1 hanging meat scale.
- J. F. Evans, Argentine. 1 Fairbanks counter platform scales.

CONDEMNED WAGON SCALES.

<i>Atchison.</i>			
Owner.	Kind.		Or.
City scales	Fairbanks.....	85	pounds.
City scales	Fairbanks.....	6	"
Barry Coal Company	(Not given)	20	"
John Markle, store	Fairbanks.....	20	"
Crawford Coal Company.....	Fairbanks.....	85	"
C. A. Wright	Victor	50	"
Snylers Coal Company	Fairbanks.....	38	"
L. Levin	(Not given)		
Home Ice Company	Fairbanks.....	30	pounds.
Schultz-Fisk Lumber Company	Fairbanks.....		
<i>Clay Center.</i>			
Clay Center Lumber Company	Howe	30	pounds.
<i>Concordia.</i>			
Chicago Lumber Company	Fairbanks.....		
Foster Lumber Company	Fairbanks.....		
Concordia Lumber Company	Fairbanks.....		
<i>Hutchinson.</i>			
W. S. Randall.....	Monarch	30	pounds.
Young & Sons.....	Champion		
Perry Feed and Grain Company.....	Victor	25	pounds.
O'Neil-Kaufman Grain Company.....	Track Scales	35	"
Wyman & Shaffer	Monarch.....	67½	"
Bailey Grain Company.....	Howe.....	57½	"
Kansas Grain Company.....	No name.....	27½	"

Emporia.

Owner.	Kind.	Off.
City Scales	Fairbanks.....	18 pounds.
S. H. Rich	McDonald-Pettlers,	22 "
J. O. Graham.....	Howe.....	27 "
J. M. Knox.....	American-Pettlers,	85 "
M. K. & T. stockyards ..	Forsyth-Beam	40 "
E. F. Sprague & Co	National.....	28 "

Junction City.

C. E. Stevens	Fairbanks.....	41 pounds.
T. J. Clark.....	Fairbanks.....	76 "
John Lauber	Fairbanks.....	100 "

McPherson.

M. B. Wright	Osgood.....	20 pounds.
Lake Superior Lumber Co.....	Fairbanks.....	25 "
City Scales.....	Fairbanks.....	.....

Ottawa.

Forest Park Milling Company	Track.....	.....
N. M. Smith, Coal.....	U. S. Standard .....	.....
Mrs. John Laird.....	Fairbanks.....	25 pounds.
Milo R. Harris	Fairbanks.....	.....
J. O. Flaherty	Fairbanks.....	.....
J. O. Flaherty	Buffalo.....	.....

Salina.

Leidegh & Havens.....	Fairbanks.....	107½ pounds.
Taylor Mill and Grain.....	Howe.....	7 "
M. A. Stevens.....	No name.....	100 "
H. H. Sudendorf Company	Fairbanks.....	44 "

FOOD ANALYSES No. XXXVII.

By Prof. H. P. CADY, Ph. D., Chemist for the State Board of Health, and Assistant Professor JACKSON, M. S., Food Analyst.

POWDERED SUGAR.

Twenty-four samples of this product have been recently examined. Of these, seven, or 30 per cent, were found adulterated. The adulterant was starch in every case, and varied from 1 to 4 per cent, and averaged a little over 2 per cent. The retail price of the adulterated article varied from 10 to 15 cents per pound. One sold for 10 cents per pound and two for 15, and the average price for the seven was 13.3 cents per pound. When it is known that starch is bought in quantity at 2½ cents a pound, and sells in pulverized sugar at 10 to 15 cents, it is realized what a profit is made in the aggregate on such an every-day commodity as powdered sugar.

While it is difficult to state just how much powdered sugar is sold in Kansas in a year, if we assume one pound per person per year we will be able to see what even such a small amount of adulteration means. This gives, for the state, 1,700,000 pounds. Since six of the seven samples containing starch were bulk goods,

it is safe to say that 50 per cent of all the pulverized sugar sold contains starch, which gives 850,000 pounds of sugar containing starch. Taking the average of 2 per cent starch in the sugar, we find 17,000 pounds of starch, costing less than 3 cents a pound, and selling for more than 13 cents as powdered sugar. At even 10 cents a pound profit this gives \$1700 that the people of Kansas contribute every year to those who add starch to powdered sugar. That is enough to more than pay for one food inspector, year by year.

Do you want to contribute your share? Do you want starch when you buy sugar? Do you think it is fair to allow some packers to put starch in sugar, when others are selling a strictly pure article in competition with them? Some manufacturers say they can not produce a pulverized sugar that will not lump, without adding starch, but others tell us they can do so and that starch is entirely unnecessary. The present collection bears this out, for one that contained starch was badly caked and twelve that did not contain starch were not caked at all. Of these, five were bulk goods, and so not protected from moisture in any way.

Fortunately, this is a condition which the consumer himself can control, and the consumer must control it when he can, for if people are content to buy adulterated sugar there will always be some one glad to furnish it to him.

How to Test Sugar for Starch.

Simply stir a half teaspoonful of the sugar into half a glass of water. If it is free from starch or any other insoluble substance the sugar will quickly dissolve and leave a bright, perfectly clear solution. If starch is present, in even small amount, the solution will stay milky or turbid, and on allowing it to stand quietly the starch will settle to the bottom in a thin, white layer.

In this connection the housewife must not depend on the way the label reads, for some of the packages were labeled "With 2 per cent starch" and contained no starch, and others that did not state its presence contained starch up to 3.5 per cent. One that admitted 2 per cent starch contained much more. Be wise: test your sugar.

One sometimes wonders if some of the firms that are so careless in labeling their goods (and there are many such examples) may not, at times, be careless about what ingredients go into them.

TABLE I.

Insp. No.	Starch found.	Starch claimed to be present.	Remarks.	Insp. No.	Starch found.	Starch claimed to be present.	Remarks.
5580	None.	None.	Past.	7981	None.	.....	Past.
5581	None.	None.	Past.	70016	None.	2.09%	Past.
5582	None.	None.	Past.	70017	2.07%	2.00	Illegal.
5583	None.	None.	Past.	70018	None.	2.00	Past.
6656	None.	None.	Past.	9618	2.22%	None.	Illegal.
6657	2.06%	None.	Illegal.	9619	1.03	None.	Illegal.
6658	None.	None.	Past.	9620	3.52	None.	Illegal.
7970	None.	None.	Past.	9621	1.46	None.	Illegal.
7971	None.	None.	Past.	9622	None.	2.00%	Past.
7972	None.	None.	Past.	9624	None.	None.	Past.
7973	None.	None.	Past.	9636	None.	None.	Past.
7974	None.	None.	Past.				

Adulterated Powdered Sugars.

No. 6657. Label, "Powdered Sugar." Manufacturer, S. W. Noggle Wholesale Manufacturing Company, Kansas City, Mo. Retailer, H. M. Fleming, Pleasanton, Kan. Starch present. Illegal.

No. 70017. Label, "May-flower Brand Powdered Sugar. With 2 per cent Starch." Manufacturer, Western Grocery Mills, Marshalltown, Iowa. Retailer, Holton Mercantile Company, Holton, Kan. Starch present. Illegal.

No. 9619. Label. "Powdered Sugar." Manufacturer, Theo Poehler Mercantile Company, Emporia, Kan. Retailer, Boyd Clithers, Concordia, Kan. Starch present. Illegal.

No. 9618. Label. "Powdered Sugar." Manufacturer, unknown. Retailer, Harrison & Nelson, Concordia, Kan. Starch present. Illegal.

No. 9620. Label. "Powdered Sugar." Manufacturer, H. D. Lee Mercantile Company, Salina, Kan. Retailer, L. S. Myers, Concordia, Kan. Starch present. Illegal.

No. 9621. Label. "Powdered Sugar." Manufacturer, Theo. Poehler Mercantile Company, Emporia, Kan. Retailer, Carothers Bros., Concordia, Kan. Starch present.

INTOXICATING BEVERAGES.

This may seem a strange heading in a food report in a prohibition state, nevertheless it is necessary. It is interesting to note that every one of these seven products, sold under the name of cider, was shipped in from Missouri.

Food inspectors collect them in order to determine whether they are true ciders or imitation and adulterated articles, so they come to this laboratory where their true nature as alcoholic beverages is soon apparent.

The following facts are published about them simply as information to the public and as an aid to local officials in finding out what is happening in their territory. The reader will notice they all contain more alcohol than the average beer. They are all good articles from the tippler's point of view.

Insp. No. 9383a. Label, "Pure Blackberry Cider." Manufacturer, Red Cross Vinegar Company, St. Louis, Mo. Retailer sent sample to laboratory to see if it were a legal product. Alcohol, 7.25 per cent. Additional information: It is not "pure blackberry cider," but a wholly artificial and imitation article, colored with a coal-tar dye and caramel.

Insp. No. 9506. Barrel containing product was unlabeled. Jobber, Mueller-Keller Candy Company, St. Joseph, Mo. Retailer, James Trimble, jr., Agenda, Kan. Alcohol, 7.72 per cent. Additional information: It is not an apple cider, but an adulterated or imitation product.

Insp. No. 9507. Barrel containing product was unlabeled. Jobber, Mueller-Keller Candy Company, St. Joseph, Mo. Retailer, James Trimble, jr., Agenda, Kan. Alcohol, 7.32 per cent. Additional information: It is not a cherry cider, but an imitation, colored with coal-tar dye.

Insp. No. 9593. Label, "Artificial Crab Apple Cider." Bottler, Colby Bottling Works, Colby, Kan. Retailer, Waters Mercantile Company, Levant, Kan. Alcohol, 7.57 per cent.

Insp. No. 9641. Label, "Apple Cider." Manufacturer, Frisco Cider Company, St. Louis, Mo. Retailer, Charles McGill, Wetmore, Kan. Alcohol, 10.30 per cent.

Insp. No. 9649. Label, "Imitation Peach Cider." Manufacturer, Frisco Cider Company, St. Louis, Mo. Retailer, Alfonso Villorial, Horton, Kan. Alcohol, 6.11 per cent. Additional information: Colored with a coal-tar dye.

Insp. No. 9650. Label, "Pure Crab Apple Cider." Manufacturer, Frisco Cider Company, St. Louis, Mo. Retailer, Alfonso Villorial, Horton, Kan. Alcohol, 5.63 per cent.

These articles pose as temperance drinks, and most of the labels read, "Preserved with $\frac{1}{10}$ of 1 per cent benzoate of soda," which conservative statement helps greatly to allay the suspicion of most people. Of course the real preservative, and salesman, is the alcohol.

NONALCOHOLIC BEVERAGES.

The carbonated beverage trade in Kansas may have a legitimate field of business—that will depend on personal preferences and one's

point of view; but certainly some of the products received in the laboratory would indicate that some bottlers had left that field behind. Probably this has come about through a failure to realize the new standards of business set by the food law, and on account of the great pressure exerted by salesmen of the companies selling bottlers' supplies, some of whom do not seem to care what they sell, so long as they sell it.

The following samples illustrate these points in detail:

Insp. No. 6640. Label. "Berrybounce. A Carbonated Fruit Beverage." Manufacturer, American Beverage Company, St. Louis, Mo. Retailer, Great Bend Bottling Company, Great Bend, Kan. A very fine example of "misbranded."

The label is large and very conspicuous, as it bears a beautiful cluster of ripe strawberries in natural colors and size, which occupies nearly the whole label. This plainly is designed to convey the impression that the product is carbonated strawberry juice, while it is nothing of the kind. The law reads that an article is misbranded, ". . . fourth, if the package containing it, or its label, shall bear any statement, design, or device, regarding the ingredients, or the substances contained therein, which statement, design or device shall be false or misleading in any particular." This law has been given the greatest publicity for five years. Any one can secure a small booklet containing a copy of the law, the food standards, and the rules and regulations regarding the same, by writing to the State Board of Health and asking for it, and there is no excuse for any one not knowing how to conduct business under the new standards demanded by the public.

Insp. No. 6641. Label. "Cheerysip. A Carbonated Fruit Beverage." Manufacturer, American Beverage Company, St. Louis, Mo. Retailer, Great Bend Bottling Works, Great Bend, Kan. The very same remarks apply to this as do to No. 6640, except that the picture in this case is of a luscious bunch of cherries, and the product is not carbonated cherry juice.

Adulterated and Misbranded.

Insp. No. 9594. This introduces a large class of beverages labeled "Cider," "Apple Cider," "Compound Cider," "Apple Cider Compound," "Grape Cider," "Imitation Grape Cider," "Crabapple Cider," "Peach Cider," "Raspberry Phosphate," "Grape Punch," and many other similar names without limit. There is a great similarity among all these products, and they are not what their labels would lead one to think. They are made by diluting one gallon of the product sold to bottlers with four gallons of

water. Of course, the degree of dilution varies with different products. The bottler knows nothing about the material of which they are made, and their analysis shows they are not made from concentrated fruit juices.

The bottler claims he can not bottle and carbonate a pure fruit juice which will sell. If this is so, then surely he should stop labeling what he does bottle as though it were made from a fruit juice. This is certainly the business standard demanded under the law.

Insp. No. 9594. Label, "Apple Cider." Manufacturer, Colby Bottling Works, Colby, Kan. Retailer, Lem Fulwider, Brewster, Kan. Is not apple cider. Illegal.

Insp. No. 9595. Label, "Pure Apple Cider." Manufacturer, Brule-Bourk Com. Co., Denver, Colo. Retailer, J. P. Horney, Brewster, Kan. Adulterated and misbranded. Contains benzoic acid. It is not pure apple cider. Illegal.

Insp. No. 9596. Label, "Artificial Grape Cider." Bottler, Colby Bottling Works, Colby, Kan. Retailer, H. C. Bebb, Dresden, Kan. Adulterated and misbranded. Contains coal-tar dye and benzoic acid as preservatives. Illegal.

Insp. No. 9601. Label, "Artificial Raspberry." Manufacturer, Hager Candy Company, Hastings, Neb. Retailer, W. D. Bovey, Woodruff, Kan. Adulterated and misbranded. Contains a coal-tar dye. Illegal.

Insp. No. 9602. Label, "Artificial Grape." Manufacturer, Hager Candy Company, Hastings, Neb. Retailer, W. D. Bovey, Woodruff, Kan. Adulterated and misbranded. Contains a coal-tar dye. Illegal.

Insp. No. 9604. Label, "Raspberry. Artificial Flavor and Color." Manufacturer, Alma Bottling Works, Alma, Neb. Retailer, W. D. Bovey, Woodruff, Kan. Misbranded. Contains salicylic acid as a preservative. Illegal.

Insp. No. 9605. Label, "Kravemor Cherry Smac Artificial." Manufacturer, Holdrege Bottling Works, Holdrege, Neb. Retailer, W. D. Bovey, Woodruff, Kan. Adulterated and misbranded. Is an imitation and contains a coal-tar dye. Illegal.

Insp. No. 9631. Label, "Condensed Apple Cider Compound." Manufacturer, Doniphan & Co., St. Joseph, Mo. Retailer, A. B. McAdams, Idana, Kan. Adulterated and misbranded. It is not condensed apple cider compound. Illegal.

Insp. No. 9632. Label, "Apple Cider Compound." Manufacturer, Warner Jenkinson Company, St. Louis, Mo. Bottler, Clay

Center Bottling Works, Clay Center, Kan. Adulterated and misbranded. It is not apple cider compound. Illegal.

Insp. No. 9633. Label. "Apple Cider, Reinforced with Cane Sugar, Artificial Color and Benzoate of Soda." Manufacturer, Los Angeles Phosphate Company, St. Louis, Mo. Retailer, F. A. Hogberg (Clay Center Bottling Works), Clay Center, Kan. Adulterated and misbranded. It is not "apple cider, reinforced with cane sugar, artificial color and benzoate of soda." Illegal.

Just stop and think a moment. If it were really apple cider, would any one need to reinforce it with anything? The mere fact that these goods come to the bottler labeled as "reinforced with sugar, artificial color, benzoate of soda, added fruit acid, artificial flavor, etc.," ought to apprise him of the fact that they are mere mixtures bearing no relation to fruits. If these various concoctions bore any relation to grapes, raspberries, cherries, etc., there would be no need of coal-tar dyes, fruit acids, caramel, etc.

Insp. No. 9643. Label. "Cherry Palmo." Manufacturer, Frisco Cider Company, St. Louis, Mo. Retailer, G. C. Todd, Whiting, Kan. Adulterated. It is colored with a coal-tar dye, which alone gives it any suggestion of cherry. It is colored to cover up its inferiority and make it look better than it really is. Without the color it was probably colorless. This is one specific use of color which the law forbids. Illegal.

In the case of imitation flavoring extracts, several manufacturers have admitted to the writer that it was the color only that sold their products; that without the colors they would all taste alike. It is just this use of color to cover up inferiority and make goods appear better than they really are that the law was designed to stop.

In the case of the above bottled goods, there is simply one point for the public to decide. Will it have any product purporting to be a fruit juice, the real juice of that fruit, the composition of which is known, or will it allow anything to pose under the name of fruits and have any composition whatsoever?

DRIED PEACHES.

Insp. No. 70,019. Label. "Evaporated Peaches." Manufacturer, J. K. Armsby Company, California. Retailer, H. H. Mitchell & Co., Holton, Kan. Bleached with sulphur dioxide. Not labeled as to presence of sulphur dioxide.

Insp. No. 7982. Label, "Evaporated Peaches." Jobber, Bittman-Todd Grocery Company, Leavenworth, Kan. Retailer, J. R.

Myer, Leavenworth, Kan. Bleached with sulphur dioxide. Not labeled as to presence of sulphur dioxide.

In federal food inspection decision No. 89 it is stated: "An abnormal quantity of sulphur dioxide placed in food, for the purpose of marketing an excessive moisture content, will be regarded as fraudulent adulteration." Nos. 7982 and 70,019 may come within this class, for 70,019 contains an excessive amount of sulphur dioxide and also 19.4 per cent moisture. While 7982 contains less sulphur dioxide, it still contains 18.2 per cent moisture. That this is an excessive amount of moisture to leave in is shown by the fact that other samples have contained 11 to 12 per cent. The housewife can add all the water necessary when she soaks up the peaches before stewing them. She should not be misled by their soft consistency and fair, light color; for the color is only due to a chemical bleach, which leaves the chemical bleach in the fruit and makes all fruit look alike, no matter how it looked at first, and the softness is due to moisture, for which she pays. What does this excess of moisture in peaches and other dried fruit amount to per thousand pounds of goods? As between 11.5 and 18.5 per cent it is an excess of 7 per cent. This on 1000 pounds is 70 pounds of water, and at 15 cents a pound, that is \$10.50. Does Kansas eat a million pounds of dried fruit in a year? If so, it pays various persons \$10,500 for water.

SWEET PICCALETTE.

Insp. No. 7984. Label, "Yours Truly Sweet Piccalette. 10 oz. Net Wt. . . ." Manufacturer, Columbia Conserve Company, Indianapolis, Ind. Jobber, Davis Mercantile Company, Topeka, Kan. This product had been previously reported in September, 1911, under No. 7888, as containing salts of aluminum. Under this number (7984) are reported several samples of this product, which were examined for aluminum salts. No salts of aluminum were found, and consequently the product is legal, as shown by this examination. This second examination was made at the request of the Columbia Conserve Company, Indianapolis, Ind.

PICKLES.

Out of eleven samples reported at this time ten are illegal and eight contain salts of aluminum. One of the other two contained sulphur dioxide and the second benzoate of soda, without any statement of the amount present.

ILLEGAL PICKLES.

Insp. No. 70,007. Label, "Fox River Brand Sour Midgets Pickles. No Benzoate of Soda or Alum used." Manufacturer,

Alart & McGuire, Green Bay, Wis. Retailer, Theo. Meinke, Linwood, Kan. Salts of aluminum present. Illegal.

Insp. No. 70,011. Label, "Delight Brand Sweet Pickles. Contain Benzoate Soda." Manufacturer, M. B. Shelley Manufacturing Company, St. Louis, Mo. Retailer, David & Son, Bonner Springs, Kan. Amount of benzoate of soda not stated. Illegal.

Insp. No. 9615. Label, "Haarmann's Superfine Sweet Pickles. Contains $\frac{1}{10}$ of 1 per cent Benzoate of Soda." Manufacturer, Haarmann Vinegar and Pickle Company, Omaha, Neb. Retailer, L. S. Myers, Concordia, Kan. Salts of aluminum present. Illegal.

Insp. No. 9616. Label, "Haarmann's Superfine Gherkins." Manufacturer, Haarmann Vinegar and Pickle Company, Omaha, Neb. Retailer, L. S. Myers, Concordia, Kan. Salts of aluminum present. Illegal.

Insp. No. 9625. Label, "Sour Pickles. Contain Alum." Manufacturer, National Pickle and Canning Company, Dodson-Braun Branch, St. Louis, Mo. Retailer, Swartz-Lynn Mercantile Company, Miltonvale, Kan. Salts of aluminum present. Illegal.

Insp. No. 9626. Label, "Sweet Pickles. Contains $\frac{1}{10}$ of 1 per cent Sodium Benzoate." Manufacturer, National Pickle and Canning Company, Dodson-Braun Branch, St. Louis, Mo. Retailer, Swartz-Lynn Mercantile Company, Miltonvale, Kan. Salts of aluminum present. Illegal.

Insp. No. 9630. Label, "N. P. & C. Co. Sour Pickles. Contains Alum." Manufacturer, National Pickle and Canning Company, Dodson-Braun Branch, St. Louis, Mo. Retailer, L. E. Wideman, Idana, Kan. Bleached with sulphur dioxide. Illegal.

Insp. No. 9668. Label, "R. B. G. Brand Sweet Gherkins. $\frac{1}{10}$ of 1 per cent of Benzoate of Soda and Alum used." Packed for Raymond Bros., Clarke Company, Lincoln, Neb. Retailer, C. W. Knight, Washington, Kan. Salts of aluminum present. Illegal.

Insp. No. 9669. Label, "R. B. G. Brand Sour Pickles. Purity and Quality are fully guaranteed." Packed for Raymond Bros., Clark Company, Lincoln, Neb. Retailer, C. W. Knight, Washington, Kan. Salts of aluminum present. Illegal.

Insp. No. 9671. Label, "Prairie Brand Sour Pickles. Prepared with a small amount of alum." Manufacturer, Wm. Hennings Company, Chicago, Ill. Retailer, I. Kasperick, Washington, Kan. Salts of aluminum present. Illegal.

Pickles Passed.

Insp. No. 9627. Salts of aluminum-absent. Passed.

EXTRACTS.—VANILLA.

In the case of Vanilla Extracts, the condition, as far as the public is concerned, is far from satisfactory. There are good extracts on the market, but there is also a host of imitations and substitute products under any and every label, many very attractive, which very easily mislead many into thinking they are buying a vanilla extract when they are not, and the label does not really say they are such. If you want Vanilla Extract, buy those products only which plainly state they are Vanilla Extracts, and which do not, elsewhere on the label, state that vanillin or coumarin or tonka or caramel are added or compounded with them.

“Vanillin, Vanilla, Tonka and Coumarin” is not Vanilla Extract.

“Compound Essence of Vanillin” is not Vanilla Extract.

“Essence of Vanillin” is not Vanilla Extract.

“Made from pure Vanillin and Vanilla” is not Vanilla Extract.

“Vanilla and Tonka” is not Vanilla Extract.

But “Vanilla Extract,” simply, will probably be Vanilla Extract.

The point is, there is no standard for these other products, and scarcely can be, so when you buy them you get what the maker chooses to give you. But Vanilla Extract is a standard product.

Insp. No. 7943. Label, “Sovereign Vanilla Flavoring. This flavoring made from pure Vanillin and Vanilla Beans.” Manufacturer, Union Pacific Tea Company, New York, N. Y. Retailer, Mrs. E. J. Calvin, Ottawa, Kan. Contains added vanillin. Illegal.

Insp. No. 7964. Substance, Vanilla Extract. Passed.

Insp. No. 9030. Substance, Vanilla Extract. Passed.

Insp. No. 9402. Label, “Two-oz. Full Measure Climax Compound Flavor of Vanillin, Vanilla, Tonka and Coumarin. 20 per cent alcohol.” Manufacturer, The Dolan Mercantile Company, Atchison, Kan. Retailer, C. Elwarner, Muscotah, Kan. Illegal.

This is one of the substitute flavors mentioned. If it contains any vanilla or tonka extract at all, they are in traces only. The word “vanilla” is only a catch word. The flavor is really due to the vanillin and coumarin present. It is colored in imitation of vanilla extract.

Insp. No. 9557, and Insp. No. 9563. These are imitation maple flavors, and are plainly labeled so.

LEMON.

Insp. No. 7976. Label, “Economy Extract of Lemon.” Manufacturer, Bittmann-Todd Grocery Company, Leavenworth, Kan. Retailer, Magnet Grocery Company, Leavenworth, Kan. The economy in this extract is an economy of lemon oil and the coal-

tar dye in it goes farther than the color derived from lemon peel. Lemon oil by precipitation, none. Coal-tar dye present. Illegal.

Insp. No. 9584. Label, "Star Brand Lemon Extract." Manufacturer, Star Manufacturing Company, Norton, Kan. Retailer, J. G. Rouse & Son, Selden, Kan. Lemon oil by precipitation, none. Coal-tar dye present. Illegal.

Insp. No. 9597. Label, "Blue Ribbon Lemon Extract." Packed for Blue Ribbon Creamery and Ice Cream Company, Shawnee, Okla. Retailer, Moore Grocery Company, Topeka, Kan. Lemon oil by precipitation, 4.09 per cent. Illegal.

Insp. No. 9638. Lemon oil by precipitation, 5.6 per cent. Passed.

APPLE BUTTERS AND PRESERVES.

Insp. No. 5563. Tested for saccharin, salicylic acid, starch, gelatin, agar-agar, coal-tar dye. None indicated. Benzoate of soda present and amount stated.

Insp. No. 5565. Tested for saccharin, salicylic acid, starch, gelatin, agar-agar, coal-tar dye, and benzoate of soda. None indicated. Passed.

Insp. No. 5566. Tested for saccharin, salicylic acid, starch, gelatin, agar-agar, coal-tar dye. None indicated. Glucose, 64 per cent. Glucose stated.

Insp. No. 5567. Tested for saccharin, salicylic acid, starch, gelatin, agar-agar, coal-tar dye. None indicated. Glucose, 53 per cent. Glucose stated.

Insp. No. 5568. Tested for saccharin, salicylic acid, starch, gelatin, agar-agar, coal-tar dye and benzoate of soda. None indicated. Passed.

Insp. No. 5569. Tested for saccharin, salicylic acid, starch, gelatin, agar-agar, coal-tar dye and benzoate of soda. None indicated. Slightly fermented.

Insp. No. 5570. Tested for saccharin, salicylic acid, starch, gelatin, agar-agar, coal-tar dye and benzoate of soda. None indicated. The apple butter had a musty odor.

Continued on page 69, April Bulletin.

IT IS UP TO YOU!

Growl, and the way looks dreary;
Laugh, and the path is bright;
For a welcome smile
Brings sunshine, while
A frown shuts out the light.

Sigh, and you "rake in" nothing,
Work, and the prize is won;
For the nervy man
With backbone can
By nothing be outdone.

Hustle, and fortune awaits you,
Shirk! and defeat is sure;
For there's no chance
Of deliverance
For the chap who can't endure.

Sing, and the world's harmonious,
Grumble, and things go wrong,
And all the time
You are out of rhyme
With the busy, hustling throng.

Kick, and there's trouble brewing,
Whistle, and life is gay,
And the world's in tune
Like a day in June,
And the clouds all melt away.

—Unknown.

BULLETIN
OF THE
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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DEACON, Registrar.

No. 4.

APRIL, 1912.

VOL. VIII.

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Our great enemy is fatigue.

Debility usually means poverty.

For the sixth season we remark — Swat the fly.

He who lacks vitality can not best fight life's battles.

We could better rear most of the children we are burying.

Preventable ignorance is the cause of much preventable disease.

We need less protection of infant industries and more protection
of infants.

Since it has been demonstrated what fresh pure air will do for
the sick, why not try it on the well?

It is impossible to develop indoors, under glass, a sturdy race of
men and women.—*Luther Burbank.*

Methods for the prevention of disease can only be understood
by a knowledge of the cause of disease.

The discovery of *cause* of disease is now receiving as much at-
tention as the search for the *cure* of disease.

VITAL STATISTICS

Reported to the Kansas Board of Health for March, 1912.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.		February.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Births..	Deaths..
The State.. totals,	35	3	42	3	163	0	104	0	473	4		
March, 1911.....	19	4	56	6	363	10	430	2	1,814	10	2,907	1,525
Allen.....	0	0	0	0	0	0	2	0	1	0	32	24
• Anderson.....											15	10
Atchison.....	0	0	0	0	6	0	0	0	0	0	6	10
• Barber.....											21	7
Barton.....	0	0	0	0	0	0	0	0	0	0	53	13
Bourbon.....	0	0	0	0	4	0	0	0	0	0	26	11
Brown.....	1	0	0	0	4	0	0	0	0	0	44	20
Butler.....	0	0	0	0	0	0	0	0	0	0	39	16
Chase.....	0	0	1	0	0	0	0	0	3	0	15	5
Chautauqua.....	1	0	0	0	0	0	0	0	2	0	7	8
Cherokee.....	0	0	0	0	6	0	2	0	120	0	86	50
• Cheyenne.....											1	1
Clark.....	0	0	0	0	0	0	0	0	0	0	5	2
Clay.....	0	0	0	0	0	0	0	0	0	0	29	7
Cloud.....	0	0	0	0	0	0	0	0	0	0	31	16
Coffey.....	0	0	0	0	0	0	0	0	0	0	19	8
Comanche.....	0	0	0	0	0	0	0	0	0	0	8	2
• Cowley.....											41	25
Crawford.....	0	0	2	1	3	0	5	0	18	1	72	43
Decatur.....	0	0	0	0	0	0	0	0	1	0	9	2
• Dickinson.....											55	24
Doniphan.....	0	0	0	0	1	0	0	0	0	0	26	4
• Douglas.....											15	8
Edwards.....	0	0	0	0	13	0	0	0	0	0	11	3
Elk.....	0	0	0	0	1	0	0	0	16	0	81	12
Ellis.....	0	0	0	0	0	0	0	0	0	0	53	8
Ellsworth.....	1	0	0	0	0	0	0	0	0	0	17	7
Finney.....	0	0	0	0	0	0	0	0	0	0	9	7
Ford.....	0	0	0	0	1	0	0	0	0	0	23	13
Franklin.....	0	0	0	0	4	0	0	0	0	0	37	22
Geary.....	0	0	0	0	1	0	0	0	1	0	27	14
Gove.....	0	0	0	0	0	0	0	0	0	0	5	2
• Graham.....											8	5
Grant.....											1	1
Gray.....	0	0	0	0	0	0	0	0	0	0	5	3
Greeley.....	0	0	0	0	0	0	0	0	0	0	4	0
Greenwood.....	0	0	0	0	0	0	0	0	0	0	31	18
Hamilton.....	0	0	0	0	0	0	0	0	0	0	4	1
• Harper.....											52	15
Harvey.....	0	0	1	0	0	0	0	0	0	0	36	15
Haskell.....	0	0	0	0	0	0	0	0	0	0	1	0
Hodgeman.....	0	0	0	0	0	0	0	0	0	0	8	3
Jackson.....	0	0	0	0	0	0	0	0	0	0	31	10
Jefferson.....	0	0	2	0	0	0	0	0	0	0	41	17
• Jewell.....											27	14
Johnson.....	0	0	0	0	0	0	0	0	0	0	33	22
Kearny.....	0	0	0	0	6	0	0	0	0	0	1	1
Kingman.....	2	0	0	0	0	0	0	0	4	0	28	6
• Kiowa.....											1	5
Labette.....	0	0	0	0	0	0	0	0	25	0	37	12
• Lane.....											4	2
Leavenworth.....	0	0	1	0	0	0	0	0	1	0	3	13
Lincoln.....	0	0	0	0	0	0	0	0	0	0	18	10
• Linn.....											30	18
Logan.....	0	0	0	0	0	0	0	0	0	0	11	0
Lyon.....	0	0	0	0	2	0	47	0	0	0	41	19
Marion.....	0	0	1	1	0	0	0	0	18	1	39	14
Marshall.....	3	0	0	0	1	0	0	0	1	0	48	17
McPherson.....	0	0	2	1	2	0	1	0	0	0	49	17

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.		February.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Births..	Deaths..
Meade.....	0	0	0	0	2	0	0	0	0	0	10	5
Miami.....	0	0	0	0	0	0	0	0	0	0	20	23
Mitchell.....	0	0	0	0	6	0	1	0	0	0	17	17
Montgomery.....	1	0	3	0	0	0	0	0	13	0	23	23
Morris.....	0	0	2	0	0	0	0	0	3	0	23	18
Morton.....	0	0	0	0	0	0	0	0	0	0	0	1
Nemaha.....	0	0	0	0	0	0	0	0	0	0	38	9
Neosho.....	0	0	0	0	5	0	0	0	4	0	47	25
Ness.....	1	0	3	0	0	0	0	0	0	0	12	4
Norton.....	0	0	0	0	0	0	0	0	0	0	8	5
Osage.....	1	0	0	0	3	0	0	0	0	0	27	10
Osborne.....	1	0	0	0	11	0	0	0	0	0	20	8
*Ottawa.....											24	7
Pawnee.....	0	0	1	0	0	0	0	0	0	0	18	4
Phillips.....	0	0	0	0	0	0	0	0	0	0	31	4
*Pottawatomie.....											23	12
Pratt.....	0	0	0	0	1	0	0	0	0	0	31	9
Rawlins.....	0	0	0	0	0	0	0	0	0	0	11	0
*Reno.....											60	10
Republic.....	0	0	0	0	0	0	1	0	0	0	24	12
Rice.....	0	0	0	0	0	0	0	0	0	0	29	8
Riley.....	0	0	0	0	7	0	0	0	0	0	35	20
Books.....	2	1	0	0	0	0	0	0	0	0	12	12
Rush.....	0	0	1	0	0	0	0	0	0	0	2	1
*Russell.....											14	7
Saline.....	1	1	0	0	15	0	0	0	0	0	37	11
*Scott.....											3	2
Sedgwick.....	0	0	1	0	0	0	35	0	0	0	32	15
Seward.....	0	0	0	0	0	0	0	0	0	0	9	3
Shawnee.....	0	0	3	0	0	0	0	0	1	0	29	11
*Sheridan.....											6	0
Sherman.....	0	0	0	0	0	0	0	0	0	0	3	1
Smith.....	0	0	0	0	0	0	0	0	0	0	28	8
*Stafford.....											32	8
*Stanton.....											0	1
Stevens.....	0	0	0	0	0	0	0	0	0	0	4	3
Sumner.....	0	0	0	0	1	0	1	0	53	0	60	22
*Thomas.....											13	0
Trego.....	0	0	0	0	0	0	0	0	0	0	11	2
Wabaunsee.....	0	0	1	0	0	0	0	0	2	0	21	10
*Wallace.....											2	3
*Washington.....											39	16
Wichita.....	0	0	3	0	1	0	1	0	1	0	1	0
Wilson.....	0	0	0	0	15	0	0	0	0	0	58	22
Woodson.....	0	0	0	0	0	0	0	0	1	0	16	11
*Wyandotte.....											23	21
<i>Cities:</i>												
Fort Scott.....	0	0	2	0	10	0	0	0	5	0	17	12
Atchison.....	3	0	0	0	0	0	0	0	68	0	13	19
Coffeyville.....	1	0	3	0	0	0	1	0	0	0	13	16
Kansas City.....	13	0	2	0	5	0	5	0	3	0	149	121
Leavenworth.....	1	0	1	0	1	0	0	0	0	0	20	29
Parsons.....	1	1	0	0	15	0	1	0	40	2	22	15
Pittsburg.....	0	0	0	0	4	0	0	0	58	0	14	22
Topeka.....	1	0	4	0	3	0	0	0	6	0	76	76
Wichita.....	0	0	3	0	1	0	1	0	1	0	61	76
*Lawrence.....											9	21
*Independence.....											40	11
Hutchinson.....	0	0	0	0	2	0	0	0	1	0	24	21

* No report from county health officers.

† Births and deaths reported with cities of first class. Reports from cities over 10,000 population not included in county returns.

DEATHS AND BIRTHS IN KANSAS, Month of February, 1912.

DEATHS.

Stillbirths not included.	
Typhoid fever.....	23
Smallpox.....	0
Measles.....	7
Scarlet fever.....	7
Whooping cough.....	10
Diphtheria.....	16
Dysentery.....	2
Tuberculosis, all forms.....	96
Cancer, all forms.....	63
Rheumatism, all forms.....	6
Diabetes.....	23
Other general diseases.....	60
Meningitis.....	31
Cerebral hemorrhage.....	104
Paralysis.....	26
Other diseases nervous system.....	51
Organic heart disease.....	133
Other diseases circulatory system.....	34
Broncho-pneumonia.....	89
Pneumonia.....	157
Other diseases respiratory system.....	48
Diarrhea and enteritis (under 2 years).....	29
Diarrhea and enteritis (2 years and over),	14
Appendicitis.....	11

Diseases of liver and adnexa.....	19
Peritonitis.....	3
Other diseases digestive system.....	33
Acute nephritis.....	8
Bright's disease.....	75
Other diseases genito-urinary system.....	15
The puerperal state.....	22
Diseases of the skin, etc.....	2
Diseases of the bones, etc.....	4
Malformations.....	13
Diseases of early infancy.....	113
Old age.....	94
Suicides.....	13
Accidents.....	68
Homicides.....	5
Ill-defined diseases.....	22
Total deaths.....	1,550
Less delayed reports.....	25
Net for February.....	1,525

BIRTHS.

Males.....	1,496
Females.....	1,411
White, 2,881.	Colored, 76.
Total births, 2,907.	
Stillbirths, 69.	

AGES AT DATE OF DEATH.

Ages.	No.
-1.....	250
1-2.....	59
3-5.....	43
6-10.....	30
11-15.....	25
16-20.....	47
21-25.....	63
26-30.....	40
31-35.....	62
36-40.....	51
41-45.....	33
46-50.....	52
51-60.....	146
61-70.....	221
71-80.....	271
81-90.....	134
91-100.....	13
100+.....	0
Unknown.....	10
Total.....	1,550

SEX.	
Males.....	852
Females.....	696
COLOR.	
White.....	1,467
Chinese.....	0
Indian.....	1
Black.....	38
NATIONALITY.	
Native.....	1,292
Foreign.....	204
Unknown.....	54
SOCIAL CONDITION.	
Single.....	570
Married.....	614
Widowed.....	328
Divorced.....	11
Unknown.....	27

FOOD ANALYSES No. XXXVII.

Continued from the March Bulletin.

TABLE OF VINEGARS.

No.	Kind of vinegar	Acid per cent	Solids per cent	Ash per cent	Alkalinity of soluble ash	Soluble P.O.	Insoluble P.O.	Per cent of total P.O.	Alcohol	Polarization	Remarks
7951	.....	2.93	2.05	0.37	.....	.....	.....	.....	8.25	.....	Illegal.
7969	Corn-sugar	4.46	2.66	0.115	.....	.....	.....	.....	.....	.....	Passed.
7983	Cider	3.90	1.18	0.20	20.0	.....	.....	.....	.....	.....	Illegal.
7996	Cider	6.01	1.55	0.245	38.0	8.2	12.7	39.2	.....	-0.13	Illegal.
7997	Cider	4.10	2.04	0.34	34.0	14.4	7.8	.....	.....	.....	Passed.
9589	Cider	1.89	.....	.....	.....	.....	.....	.....	.....	.....	Illegal.
9600a	Cider	5.66	1.89	0.34	37.0	10.0	15.2	.....	.....	-0.98	Passed.

Additional Data to Illegal Vinegars Listed Above.

(See table of vinegars.)

Insp. No. 7951. Substance, "Pure Apple Juice." Manufacturer, A. M. Blackmer, Scott City, Kan. Retailer, I. S. Ruth, Scott City, Kan. Illegal. This sample is exceptional. It is labeled "Pure Apple Juice," but is not pure apple juice and was sold as vinegar. It is too near vinegar to sell as apple juice, and too weak to sell as vinegar, and is illegal from either point of view.

Insp. No. 7969. Substance, "Corn Sugar Vinegar." Passed.

Insp. No. 7983. Substance, "Vinegar." Manufacturer, Hunt Wine Company. Retailer, Otto Schmeckel, Leavenworth, Kan. Illegal.

Insp. No. 7996. Substance, "Vinegar." Secured from the State Asylum, Topeka, Kan. Illegal.

Insp. No. 7997. Substance, "Vinegar." Passed.

Insp. No. 9589. Substance, "Cider Vinegar." Manufacturer, B. P. Wells, Kanorado, Kan. Retailer, W. D. Wooley, Kanorado, Kan. Illegal.

PECAN NUTS.

Three samples, all coated, colored and polished, to make them appear better than they really are.

Insp. No. 9646. Substance, "Pecans." Jobber, Willcuts & Fadely. Retailer, G. W. Baird, Horton, Kan. Illegal.

Insp. No. 9647. Substance, "Pecans." Jobber, G. W. Chase & Son, St. Joseph, Mo. Retailer, W. B. Bolsinger, Horton, Kan. Illegal.

Insp. No. 9648. Substance, "Pecans." Jobber, Letts-Parker

Grocery Company, St. Joseph, Mo. Retailer, W. A. Putcamp, Horton, Kan. Illegal.

EVAPORATED MILK.

Insp. No. 7975. Label, "Sego Brand Evaporated Milk...." Manufacturer, Utah Condensed Milk Company, Richmond, Utah. Retailer, E. S. Brewster, Leavenworth, Kan. Butter fat, 7.46; total solids, 25.50; fat plus total solids, 33.0. Illegal.

Insp. No. 7978. Label, "Sego Brand Evaporated Milk...." Manufacturer, Utah Condensed Milk Company, Richmond, Utah. Retailer, M. A. Wohlfrom, Leavenworth, Kan. Butter fat, 7.46; total solids, 26.35; fat plus total solids, 33.81. Illegal.

HONEY.

Insp. No 7966. Analysis shows it pure honey. Passed.

BAKING POWDER.

Insp. No. 70,010. Label, "Signet Baking Powder...." Manufacturer, Sherman Bros. & Company, Chicago, Ill. Retailer, D. M. Dunakan, North Lawrence, Kan. Available carbon dioxide, 3.03 per cent. It should be at least 10 per cent. Just who is responsible for this condition is not known, for other baking powders by this manufacturer have been found above standard. It is probably very old goods. Illegal.

BUTTER.

Insp. No. 3252*b*. Substance, "Butter." Brought in by a student in Lawrence. Found to be genuine butter, not of very high grade. Passed.

FOOD ANALYSES No. XXXVIII.

By Prof. J. T. WILLARD, Analyst for the Board, and C. A. A. UTT, Assistant.

MANHATTAN, KAN., April 3, 1912.

In the following pages the results of the examination of a large number of food substances are shown, including some which by oversight were omitted from the previous report.

BUCKWHEAT FLOUR.

A number of samples of buckwheat flour have been examined microscopically for starch grains from other sources. While there are difficulties attending this mode of investigating any substance, it is believed that any extensive adulteration of the buckwheat flour would be detected.

Insp. No. 9682, serial No. 4970. Manufacturer, Wright's Mills, Berlin, Wis. Retailer, Demarais & Ronnan, St. Marys, Kan. Brand, "Wright's Old Fashioned." Passed.

Insp. No. 7994, serial No. 4971. Manufacturer, not stated. Retailer, Dibble Grocery Company, Topeka, Kan. Passed.

Insp. No. 7995, serial No. 4972. Manufacturer, not stated. Retailer, Shawnee Grocery Company, Topeka, Kan. Passed.

Insp. No. 6660, serial No. 4973. Manufacturer, Rassignid & Wescott, Laceyville, Pa. Retailer, Jordan & Co., Larned, Kan. Passed.

Insp. No. 6661, serial No. 4974. Manufacturer, Burkett Mills, Penn Yan, N. Y. Retailer, C. C. Chase, Larned, Kan. Brand, "Pickwick." Passed.

Insp. No. 6664, serial No. 4975. Manufacturer, Blair Milling Company, Atchison. Retailer, Holbrook Bros., Jetmore, Kan. Brand, "Buck." Passed.

Insp. No. 6666, serial No. 4976. Jobber, Sprague, Warner & Co, Chicago. Retailer, J. Smith, Hutchinson, Kan. Brand, "Ferndell." Passed.

Insp. No. 6668, serial No. 4977. Manufacturer, Wright's Mills, Berlin, Wis. Retailer, C. W. Masters, Hutchinson, Kan. Brand, "Wright." Illegal.

Insp. No. 6669, serial No. 4978. Jobber, Franklin MacVeagh & Co., Chicago. Retailer, N. E. Williams, Hutchinson, Kan. Brand, "Telmo." Passed.

Insp. No. 6670, serial No. 4979. Manufacturér, Blodgett Milling Company, Janesville, Wis. Retailer, C. Mammel, Hutchinson, Kan. Brand, "Old Time." Passed.

WHEAT AND WHEAT FLOUR.

Several samples of wheat were submitted for information with reference to their suitability for the manufacture of flour. In this we were ably assisted by Prof. C. O. Swanson, assistant chemist of the Agricultural Experiment Station. All of the samples seemed fit for flour manufacture.

Insp. No 9607, serial No. 4827. Wheat from Snell Mill and Grain Company, Clay Center, Kan. Passed.

Insp. No. 9608, serial No. 4828. Wheat from Snell Mill and Grain Company, Clay Center, Kan. Passed.

Insp. No. 9609, serial No. 4829. Wheat from Snell Mill and Grain Company, Clay Center, Kan. Passed.

Insp. No. 9611, serial No. 4831. Wheat from Williams Milling Company, Clay Center, Kan. Passed.

Insp. No. 9613, serial No. 4833. Wheat from Williams Milling Company, Clay Center, Kan. Passed.

Insp. No. 9610, serial No. 4830. Wheat flour sold by Snell Mill and Grain Company, Clay Center, Kan. Percentage of water, 12.12. Sample reacts slightly for nitrites, thus seems to have been bleached. Illegal.

Insp. No. 9612, serial No. 4832. Wheat flour manufactured by the Williams Milling Company, Clay Center, Kan. Percentage of water, 10.09. No reaction for nitrites. Passed.

Insp. No. 9635, serial No. 4856. Graham flour, manufactured by the Blue Rapids Milling Company, Blue Rapids, Kan. Separation by sifting gave 20 per cent bran, 20 per cent coarse middlings, 35 per cent fine middlings, and 25 per cent flour. In the judgment of Professor Swanson this is obtained by grinding the product of the first or second break as fine as practicable. It is not graham flour in the true sense. The modern roller mill is not adapted to making genuine graham flour, and this sample perhaps represents as good an imitation as the facilities of the manufacturer would permit. Illegal.

CONDENSED MILK.

A considerable number of samples of condensed milk or evaporated milk are reported upon. Mention may be made of the fact that the standard for condensed milk was changed last October. The former standard provided that the product should contain not less than 28 per cent of milk solids, and that of the milk solids not less than 27.6 per cent should be milk fat. In respect to composition, under the new standard, condensed milk or evaporated milk contains such percentages of total solids and of fat that the sum of the two shall not be less than 34.3 per cent, and the percentage of fat shall be not less than 67.8 per cent.

ICE CREAM.

Insp. No. 6549, serial No. 4586. Manufacturer, Phillips Ice Cream, Kansas City, Kan.; retailer, Harrison Drug Company, Kansas City, Kan. The fat in this sample was not in the condition in which it is ordinarily present in ice cream. It separated readily and could not be mixed again for accurate sampling. No reliable determination of the fat could be made. The fat was highly colored and gave tests for annatto. The ash from 50 cubic centimeters of the ice cream effervesced strongly with hydrochloric acid. The substance evidently contained colored fat which had apparently been added to the cream, and soda had also been added. Illegal.

MILK AND CREAM.

Insp. No.	Serial No.	SELLER AND PLACE.	Fat.	Total solids.	Solids not fat.	Class.
6589	4571	H. L. Armotrout, Kansas City.....	3.00	11.79	8.79	Illegal.
6540	4572	Chinery & Booth, Kansas City.....	3.35	11.91	8.56	Passed.
6541	4573	R. Curran, Kansas City.....	3.10	11.36	8.26	Illegal.
6542	4574	R. R. Rea, Kansas City.....	3.40	11.78	8.38	..
6543	4575	Kerr Dairy, Kansas City.....	2.80	9.56	6.76	..
6546	4576	Reed Bros., Kansas City.....	3.10	10.81	7.71	..
6547	4577	Minbaster, Kansas City.....	3.30	12.60	9.30	Passed.
6548	4578	M. Bodley, Kansas City.....	3.00	10.79	7.79	Illegal.
6554	4579	V. Lemmon, Kansas City.....	3.45	12.74	9.29	Passed.
6555	4580	Schweikhaus, Kansas City.....	2.80	12.95	10.05	Illegal.
6556	4581	Schweikhaus, Kansas City.....	2.70	10.77	8.07	..
6558	4582	L. D. Monday, Kansas City.....	2.90	10.49	7.69	..
6559	4583	F. Siebers, Kansas City.....	3.40	12.97	9.57	Passed.
6560	4584	Mueller Bros., Kansas City.....	3.30	12.48	9.18	..
6561	4585	Swisher Grocery, Kansas City.....	2.65	12.16	9.51	Illegal.
6570	4595	G. W. Sargent, Kansas City.....	2.10	9.78	7.63	..
6571	4596	R. R. Rea, Kansas City.....	2.20	11.30	9.10	..
6572	4597	J. F. Kerr, Kansas City.....	2.90	10.45	7.65	..
6573	4598	Dillon Grocery, Kansas City.....	3.10	11.18	8.08	..
6574	4599	Cople Grocery, Kansas City.....	3.35	12.06	8.31	Passed.
6575	4600	P. Nisselhof, Kansas City.....	2.65	9.27	6.62	Illegal.
6576	4601	Hurr Grocery, Kansas City.....	3.50	12.09	8.59	Passed.
6577	4602	Hurr Grocery, Kansas City.....	2.50	9.63	7.13	Illegal.
6578	4603	M. L. Dailey, Kansas City.....	2.50	11.60	9.10	..
6579	4604	G. W. Mullen, Kansas City.....	4.40	12.91	8.51	Passed.
6580	4605	B. F. Layton, Kansas City.....	3.00	12.98	9.98	Illegal.
6581	4606	W. M. Farmer, Kansas City.....	3.20	11.80	8.60	..
6582	4607	J. M. Gunther, Kansas City.....	2.60	11.15	8.55	..
6583	4608	L. Knudsen, Rosedale.....	2.80	11.25	8.45	..
6584	4609	W. Hampton, Rosedale.....	2.80	12.21	9.41	..
6585	4610	J. P. Jensen, Rosedale.....	2.50	11.51	9.01	..
6586	4611	D. E. Anderson, Rosedale.....	3.00	12.60	9.60	..
6587	4612	J. M. Chandler, Rosedale.....	2.00	10.55	8.55	..
6588	4613	P. Claassen & Son, Rosedale.....	2.00	11.49	9.49	..
6589	4614	O. Olson, Argentine.....	3.80	12.48	8.68	Passed.
6590	4615	J. E. Johnson, Argentine.....	3.70	13.43	9.73	..
6591	4616	B. Cheatwood, Argentine.....	2.70	12.72	10.02	Illegal.
6592	4617	A. Boyde, Argentine.....	3.80	12.48	8.68	Passed.
6593	4618	Elke Grocery, Argentine.....	3.80	11.90	8.10	..
6594	4619	J. F. Ferreira, Argentine.....	3.80	12.32	8.52	..
6595	4620	F. Lobner, Rosedale.....	3.40	11.26	7.86	Illegal.
6596	4621	Johnson Bros., Rosedale.....	2.80	11.15	8.35	..
6597	4622	Nicholson, Rosedale.....	2.60	11.75	9.15	..
6598	4623	Neal Holm, Rosedale.....	3.30	12.30	9.00	Passed.
6599	4624	Walsh, Rosedale.....	3.30	11.61	8.31	Illegal.
6600	4625	A. Limpquist, Rosedale.....	3.30	11.51	8.21	..
6601	4626	Johnson Bros., Rosedale.....	2.80	11.59	8.79	..
6602	4627	J. Lloyd, Rosedale.....	2.60	12.93	10.33	..
6603	4628	L. L. Ely, Rosedale.....	2.60	11.08	8.48	..
6604	4629	F. A. Caduff, Rosedale.....	3.40	11.53	8.13	..
6605	4630	L. Vanmol, Kansas City.....	3.30	11.04	7.74	..
6606	4631	H. H. Saunders, Kansas City.....	2.80	9.77	6.97	..
6607	4632	W. Lauerie, Kansas City.....	4.50	13.93	9.43	Passed.
6608	4633	H. Marten, Kansas City.....	3.30	11.93	8.63	..
6609	4634	Hockborn, Kansas City.....	2.80	10.79	7.99	Illegal.
6611	4635	H. C. Ochs, Kansas City.....	3.10	12.09	8.99	..
6612	4637	J. W. Henry, Kansas City.....	2.90	11.64	8.74	..
6613	4638	P. H. Holmes, Kansas City.....	2.40	10.36	7.96	..
6614	4639	P. H. Holmes, Kansas City.....	3.12	11.12	8.12	..
6615	4640	A. John on, Kansas City.....	3.20	11.71	8.51	..
6616	4641	J. Godfrey, Kansas City.....	2.80	9.85	7.05	..
6617	4642	Alberti Grocery, Kansas City.....	3.00	10.79	7.79	..
6618	4643	M. Lutz Grocery, Kansas City.....	2.30	11.75	9.45	..
6619	4644	A. V. Wilson, Kansas City.....	2.60	11.48	8.88	..
6620	4645	E. B. Lucas, Kansas City.....	3.20	11.25	8.35	..
7901	4689	Buell Cream and Candy Company, Salina.....	28.00	.....	.....	Passed.

CONDENSED MILK.

Insp. No.	Serial No.	MANUFACTURER, JOBBER, RETAILER.*	Fat.	Solids.	Solids + fat.	Class.
7889	4679	1 Indiana Condensed Milk Co., Sheridan, Ind., 2 Davis Mercantile Co., Topeka	6.40	28.20	29.60	Illegal.
9525	4768	3 J. A. Coulter, Topeka 1 Pacific Coast Condensed Milk Co., Seattle, Wash.				
9526	4764	2 Ridenour-Baker Grocery Co., Kansas City, Mo. 3 John Atkinson, Greenleaf, Kan.				
9528	4785	1 Helvetia Milk Condensing Co., Highland, Ill. 2 Dolan Mercantile Co., Atchison. 3 Woodford Mercantile Co., Greenleaf, Kan.	8.00	26.28	34.28	Passed.
9529	4766	1 Borden's Condensed Milk Co., New York. 2 Letts-Spencer Co., St. Joseph, Mo. 3 B. A. Throop, Washington, Kan.	8.00	26.24	34.24	Passed.
9530	4767	1 Not stated. 2 Kansas City Wholesale Grocery Co., Kan- sas City, Mo. 3 H. C. Jones, Washington, Kan.	7.80	26.54	34.34	Passed.
9538	4768	1 Not stated. 2 Sprague, Warner & Co., Chicago 3 W. W. Hilton, Washington, Kan.	7.80	26.58	34.38	Passed.
9539	4769	1 Cornell Bros., Elgin, Ill. 2 Dolan Mercantile Co., Atchison. 3 J. J. Buser, Seneca, Kan.	7.90	25.80	33.70	Illegal.
9540	4770	1 Borden's Condensed Milk Co., New York. 2 Ridenour-Baker Grocery Co., Kansas City, Mo. 3 G. J. Michaelis, Seneca, Kan.	8.20	27.44	35.64	Passed.
9541	4771	1 Van Camp Packing Co., Indianapolis, Ind. 2 The Symms Grocery Co., Atchison. 3 G. J. Michaelis, Seneca, Kan.	7.80	27.62	35.42	Passed.
9542	4772	1 Sheboygan Evaporated Milk Co., Sheboy- gan, Wis. 2 Nave-McCord Mercantile Co., St. Joseph, Mo. 3 Ralph G. Johnson, Seneca, Kan.	7.80	27.62	35.42	Passed.
9545	4773	1 Not stated. 2 Letts-Spencer Grocery Co., St. Joseph, Mo., 3 J. H. H. Ford, Seneca, Kan.	7.84	27.70	35.54	Passed.
9546	4774	1 Libby, McNeill & Libby, Chicago. 2 Swift & Co., South St. Joseph, Mo. 3 Roy Hennigh, Sabetha, Kan.	8.00	27.16	35.16	Passed.
9531	4775	1 Not stated. 2 Reid, Murdoch & Co., Chicago 3 E. M. Newman, Sabetha, Kan.	7.80	25.98	33.78	Illegal.
9548	4781	1 Borden's Condensed Milk Co., New York. 2 Raymond Bros. Clark Co., Lincoln, Neb. 3 Barley Grocery Co., Washington, Kan.	8.20	27.44	35.64	Passed.
9549	4782	1 Indiana Condensed Milk Co., Sheridan, Ind., 2 H. D. Lee Mercantile Co., Salina, Kan. 3 Star Grocery, Beloit, Kan.	9.20	74.58	83.78	Sweetened Passed.
9554	4783	1 Oatman Condensed Milk Co., Dundee, Ill. 2 Watson-Durand-Kasper Grocery Co., Sa- lina, Kan. 3 Ewart Bros., Beloit, Kan.	8.40	26.74	35.14	Passed.
9556	4784	1 Cornell Bros., Elgin, Ill. 2 Dolan Mercantile Co., Atchison. 3 Gaddis & Son, Cedar, Kan.	8.00	24.00	32.00	Illegal.
9568	4785	1 Utah Condensed Milk Co., Richmond, Utah, 2 Paxton-Gallagher Co., Omaha 3 Barron Mercantile Co., Kensington, Kan.	8.00	27.20	35.20	Passed.
9569	4816	1 St. Charles Condensing Co., St. Charles, Ill., 2 McCord-Brady Co., Omaha 3 H. L. Chandler & Sons, Esbon, Kan.	7.20	25.64	32.84	Illegal.
9575	4817	1 Indiana Condensing Co., Sheridan, Ind. 2 Bittman-Todd Grocery Co., Leavenworth. 3 Boerner & Troutfetter, Colby, Kan.	8.00	29.02	37.02	Passed.
9582	4818	1 St. Charles Condensing Co., St. Charles, Ill., 2 Cushing Grocery Co., Hastings, Neb. 3 Almena Mercantile Co., Almena, Kan.	8.40	26.00	34.40	Passed.
		1 Indiana Condensing Co., Sheridan, Ind. 2 Bittman-Todd Grocery Co., Leavenworth. 3 W. A. Eakin, Clayton, Kan.	8.00	27.00	35.00	Passed.
			8.40	26.28	34.68	Passed.

CONDENSED MILK - CONTINUED.

Insp. No.	Serial No.	MANUFACTURER, JOBBER, RETAILER.*	Fat.	Solids.	Solids + fat.	Class.
9687	4819	1 Libby, McNeill & Libby, Chicago.....	8.40	26.96	35.36	Passed.
		2 Swift & Co, St. Joseph, Mo.....				
9655	4918	3 Wm. A. Helvey & Son, Goodland, Kan.....	8.80	28.04	36.84	Passed.
		1 National Condensed Milk Co., Chicago.....				
4658	4919	2 Ridenour-Baker Grocery Co., Kansas City, Mo.....	8.60	26.96	35.56	Passed.
		3 A. J. Jones, Mayetta, Kan.....				
4670	4920	1 Ariston Condensed Milk Co., Ariston, Ill.....	8.20	27.78	35.98	Passed.
		2 McCord-Kistler Mercantile Co., Topeka.....				
6673	4960	3 F. W. Klasse, Belvue, Kan.....	8.10	26.13	34.23	Passed.
		1 Sheboygan Evaporated Milk Co., Sheboygan, Wis.....				
9699	5004	2 Raymond Bros. Clark Co., Lincoln, Neb.....	8.00	27.25	35.25	Passed.
		3 I. Kasperick, Washington, Kan.....				
9697	5008	1 Oostburg Evaporated Milk Co., Oostburg, Wis.....	8.00	25.67	33.67	Illegal.
		2 Davis Mercantile Co., Topeka.....				
		3 Peak Bros., Manhattan, Kan.....				
		1 Not stated.....				
		2 Pittsburg Wholesale Grocery Co., Pittsburg, Kan.....				
		3 A. P. Free, Chetopa, Kan.....				
		1 Not stated.....				
		2 Interstate Grocery Co., Joplin, Mo.....				
		3 Markley Bros., Cherryvale, Kan.....				

*1 Manufacturer. 2 Jobber. 3 Retailer.

ICE CREAM.

Insp. No.	Serial No.	RETAILER.	Per ct. fat.	Class.
6580	4444	E. Poehler, Hutchinson.....	16.00	Passed.
6581	4445	Geo. Wieda, Hutchinson.....	12.40	Illegal.
6582	4446	Hunsley Bros., Hutchinson.....	11.40	Illegal.
6583	4447	A. S. Pearce, Hutchinson.....	13.50	Illegal.
7896	4683	G. M. Baker & Son, Ellsworth.....	11.20	Illegal.
7897	4685	Salina Sanitary Milk Company, Salina.....	15.60	Passed.
7899	4687	Buell Cream and Candy Company, Salina.....	9.60	Illegal.
7900	4688	Buell Cream and Candy Company, Salina.....	10.00	Illegal.
7902	4690	Buell Cream and Candy Company, Salina.....	17.60	Passed.
7914	4704	Topeka Pure Milk Company, Topeka.....	21.60	Passed.
7915	4705	Topeka Pure Milk Company, Topeka.....	14.00	Passed.
7917	4707	Walker Ice Cream Company, Topeka.....	13.50	Illegal.
9629	4733	W. J. Montgomery, Greenleaf.....	7.60	Illegal.
9632	4734	John Meinberg, Seneca.....	3.20	Illegal.
9633	4735	Otto A. Kelm, Seneca.....	8.20	Illegal.
9636	4736	Kretzer Bros., Sabetha.....	11.60	Illegal.
9637	4737	Miller & Harold, Sabetha.....	17.20	Passed.
7931	4742	Den of Sweets, Kansas City.....	12.80	Illegal.
7932a	4743	W. O. Phillips, Kansas City.....	11.20	Leaking.
7932b	4744	W. O. Phillips, Kansas City.....	12.80	Illegal.
7933	4745	Meyer Sanitary Milk Company, Kansas City.....	14.00	Passed.
7934	4746	Meyer Sanitary Milk Company, strawberry, Kansas City.....	12.40	Passed.
7935	4747	DeCoursey Pure Milk Company, Kansas City.....	13.60	Illegal.
7936	4748	DeCoursey Pure Milk Company, Kansas City.....	12.80	Illegal.
7987	4749	E. Baughman, Kansas City.....	5.80	Illegal.
7938	4750	E. Baughman, Kansas City.....	6.00	Illegal.

Ice Cream, Continued.

Insp. No. 6550, serial No. 4587. Manufacturer, Phillips Ice Cream, Kansas City; retailer, W. E. Dengel, Kansas City; and Insp. No. 6553, serial No. 4590, manufacturer, Phillips Ice Cream, Kansas City; retailer, Cartmie Drug Company, Kansas City, Kan. These two samples were entirely similar to No. 6549 and are illegal.

Insp. No. 9524, serial No. 4723. "Frozen Dainty," manufactured by Topeka Dainty Company, Topeka, Kan. This preparation was found to contain 3.0 per cent of fat, and also something used as a thickener. It is an example of a frozen refreshment that can not be legally designated as ice cream in that it is greatly lacking in butter fat and contains constituents foreign to ice cream as defined. It is a legitimate article of trade if sold with full understanding on the part of the purchaser. The temptation to sell it as ice cream and the liability of the purchaser to misunderstand the situation is of course very great.

CANNED CORN.

Insp. No. 7850, serial No. 4555. "Rockford's Pride Sugar Corn," manufactured by the Rockford Packing Company, Rockford, Ill.; sold by Ike Holbert, Manhattan, Kan. Sugar and starch declared on label. No reaction for sulphites or saccharine. Passed.

Insp. No. 7810, serial No. 4556. "Anvil Brand Corn," packed for Geo. T. Oliver, Burlingame, Kan., and sold by him. No sulphites or saccharine present.

Insp. No. 7805, serial No. 4693. "Sunburst Brand Sweet Corn"; manufacturer, Theo. Poehler Mercantile Company, Lawrence, Kan.; retailer, Beale & Tabor, Burlingame, Kan.

Insp. No. 7806, serial No. 4694. "Badger Brand Sweet Corn." Manufacturer, Klindt-Geiger Canning Company, Cassville, Wis.; retailer, Beale & Tabor, Burlingame, Kan. No sulphites or saccharine.

Insp. No. 7811, serial No. 4696. "Gilman Brand Sugar Corn." Manufacturer, Gilman Canning Company, Gilman, Iowa; retailer, Geo. B. Oliver, Burlingame, Kan. No sulphites or saccharine present.

Insp. No. 7832, serial No. 4697. "Blackhawk Brand Sugar Corn." Manufacturer, Waterloo Canning Corporation, Waterloo, Iowa; retailer, Bunge Mercantile Company, Eskridge, Kan. No sulphites or saccharine present.

BEANS, ETC.

Insp. No. 7804, serial No. 4408. "Beans in Tomato Sauce," Sunburst brand, manufactured by Theo. Poehler Mercantile Company, Lawrence, Kan.; retailer, Beale & Tabor, Burlingame, Kan. No benzoates. Passed.

Insp. No. 7809, serial No. 4409. "Pork and Beans with Sauce," Beauty brand, manufactured by the Ridenour-Baker Grocery Company, Kansas City, Mo., and sold by L. A. Dutton, Burlingame, Kan. No benzoates. Passed.

Insp. No. 7812, serial No. 4410. "Pork and Beans," Yours Truly brand, distributed by the Davis Mercantile Company, Topeka, and sold by Geo. T. Oliver, Burlingame, Kan. No benzoates. Passed.

Insp. No. 7813, serial No. 4411. "Pork and Beans." Pickwick brand. Jobber, Kansas City Wholesale Grocery Company, Kansas City, Mo.; retailer, Geo. T. Oliver, Burlingame, Kan. No benzoates. Passed.

Insp. No. 7821, serial No. 4412. "Pork and Beans." Punch brand. Jobber, Ridenour-Baker Grocery Company, Kansas City, Mo.; retailer, Joe McClure, Harveyville, Kan. No benzoates. Passed.

Insp. No. 7822, serial No. 4413. "Baked Pork and Beans" Unitus brand. Jobber, McCord-Kistler Mercantile Company, Topeka, Kan.; retailer, J. Longabaugh, Halifax, Kan. No benzoates. Passed.

Insp. No. 7823, serial No. 4414. "Pork and Beans." Van Camp brand. Manufacturer, Van Camp Packing Company, Indianapolis, Ind. Jobber, Poehler Mercantile Company, Lawrence, Kan.; retailer, J. Longabaugh, Halifax, Kan. No benzoates. Passed.

Insp. No. 7829, serial No. 4415. "Pork and Beans." Snider (Process) brand. Manufacturer, T. A. Snider Preserving Company, Cincinnati, Ohio; retailer, The Mudge Mercantile Company, Eskridge, Kan. No benzoates. Passed.

Insp. No. 7830, serial No. 4416. "Baked Beans." Heinz brand. Manufacturer, H. J. Heinz, Pittsburgh, U. S. A.; retailer, The Mudge Mercantile Company, Eskridge, Kan. No benzoates. Passed.

Insp. No. 7831, serial No. 4417. "Baked Beans." Cafe brand. Manufacturer, The Reber Preserving Company, Chicago; retailer, Bunger Mercantile Company, Eskridge, Kan. No benzoates. Passed.

Insp. No. 7840, serial No. 4418. "Pork and Beans." Perfection brand. Manufacturer, Bloomington Canning Company, Bloomington, Ill.; retailer, Allwardt & Sharrai. Benzoates declared on label. Passed.

Insp. No. 7844, serial No. 4419. "Baked Beans." Defiance brand. Jobber, Letts-Spencer Grocery Company, St. Joseph, Mo.; retailer, J. A. Book, White City, Kan. No benzoates. Passed.

Insp. No. 7845, serial No. 4420. "Pork and Beans." Anvil brand. Jobber, Letts-Spencer Grocery Company, St. Joseph, Mo.; retailer, Torgeson Bros., White City, Kan. No benzoates. Passed.

Insp. No. 7846, serial No. 4421. "Beans with Tomato Sauce." Champion brand. Manufacturer, Frazier Packing Company, Elwood, Ind.; jobber, Letts-Spencer Grocery Company, St. Joseph, Mo.; retailer, Torgeson Bros., White City, Kan. No benzoates. Passed.

Insp. No. 7851, serial No. 4422. "Beans, Boston Style, with Tomato Sauce." American Beauty brand. Manufacturer, Austin Canning Company, Austin, Ind.; jobber, McCord-Kistler Mercantile Company, Topeka; retailer, McDonald & Douglas, Manhattan. No benzoates. Passed.

Insp. No. 7852, serial No. 4423. "Pork and Beans." Campbell's brand. Manufacturer, Joseph Campbell Company, Camden, N. J.; retailer, Bee Hive Mercantile Company, Manhattan. No benzoates. Passed.

Insp. No. 7853, serial No. 4424. "Baked Beans." Argonaut brand. Manufacturer, Fort Stanwix Canning Company, Rome, N. Y.; retailer, Bee Hive Mercantile Company, Manhattan. No benzoates. Passed.

Insp. No. 7854, serial No. 4425. "Beans." No label. Sold by Bee Hive Mercantile Company. No benzoates. Passed.

Insp. No. 7808, serial No. 4440. "Tomato Soup." Yours Truly brand. Jobber, Davis Mercantile Company, Topeka; retailer, L. A. Dutton, Burlingame, Kan.

Insp. No. 7814, serial No. 4441. "Succotash." Frontier 1846 brand. Jobber, Nave-McCord Mercantile Company, St. Joseph, Mo.; retailer, Geo. T. Oliver, Burlingame, Kan. No saccharine. Passed.

PICKLES AND CATSUPS.

Insp. No. 9651, serial No. 4356. "Pickles." Delight brand. Manufacturer, M. B. Shelley Manufacturing Company, St. Louis, Mo.; jobber, Letts-Spencer Grocery Company, St. Joseph, Mo.; retailer, C. Jenkinson, Troy, Kan. Alum present. Illegal.

Insp. No. 6672, serial No. 5005. "Sour Pickles." Palace Car brand. Jobber, McCord-Kistler Mercantile Company, Topeka; retailer, Ike Holbert, Manhattan. Alum and turmeric present. Illegal.

VINEGAR.

Insp. No. 7873, serial No. 4442. Vinegar, manufactured by D. Debacker, North Topeka, and sold by Cope & Co., Topeka. The low specific gravity and solids indicate that this is a watered vinegar. Illegal.

VINEGAR.

Insp. No.	Serial No.	Kind of vinegar.	Specific gravity.	100 cubic centimeters.				Class.
				Con-tains — grams acetic acid.	Con-tains — grams total solids.	Yields — grams ash.	Yields soluble ash requiring — c. c. deci-normal acid to neutralize.	
7873	4442	Cider.....	1.0071	4.53	1.24	0.400	33.6	Illegal.
7874	4443	Distilled.....	1.0061	3.90	0.47	0.088	00.8	Illegal.
7875	4449	Cider.....	1.0082	3.92	1.09	0.270	30.4	Illegal.
7877	4450	Cider.....	1.014	4.95	2.05	0.340	37.2	Passed.
7878	4451	Cider.....	1.012	3.80	2.36	0.316	33.6	Illegal.
7885	4452	Cider.....	1.018	4.03	2.06	0.320	33.6	Passed.
9407	4463	Cider.....	1.0081	2.61	1.54	0.320	36.8	Illegal.
9446	4464	Sugar.....	1.0150	4.81	2.18	0.24	12.0	
9454	4465	Cider.....	1.0161	3.99	2.53	0.56	31.2	Passed.
9455	4466	Cider.....	1.0131	5.44	1.68	0.23	33.6	Passed.
9458	4467	Cider.....	1.0104	3.70	1.72	0.32	41.6	Illegal.
9474	4468	Cider.....	1.0081	2.83	2.84	0.30	40.6	Illegal.
9477	4469	Cider.....	1.0101	2.96	1.75	0.20	28.8	Illegal.
6518	4470	Cider.....	1.0131	4.38	1.96	0.35	44.0	Passed.
6527	4471	Cider.....	.....	3.49	2.01	0.38	32.8	Illegal.
9482	4472	Cider.....	1.0067	3.12	1.37	0.24	32.0	Illegal.
9478	4473	Cider.....	1.0120	3.31	2.48	0.51	36.0	Illegal.
5560	4756	Cider.....	.....	4.49	2.26	0.460	40.0	Passed.
5561	4757	Cider.....	.....	4.36	2.04	0.380	44.0	Passed.
5562	4758	Cider.....	.....	5.05	2.28	0.400	38.4	Passed.

Insp. No. 7874, serial No. 4443. Vinegar, manufactured by the Dodson-Braun Manufacturing Company, St. Louis, Mo., and sold by H. H. Parker, Topeka. The results obtained indicate that this is a distilled vinegar, colored with caramel. Illegal.

Insp. No. 7875, serial No. 4449. Vinegar, manufactured by F. H. Washburn, Topeka, and sold by A. A. Alderfer, Topeka. The low solids and specific gravity indicate that this is a watered cider vinegar. Illegal.

Insp. No. 7877, serial No. 4450. Vinegar, Beach-nut brand, manufactured by the Beach-nut Packing Company, Canajoharie, N. Y.; jobber, Ridenour-Baker Grocery Company, Kansas City, Mo.; retailer, J. C. Taupert, Topeka, Kan. Excellent cider vinegar. Passed.

Insp. No. 7878, serial No. 4451. Vinegar, Silver Leaf brand, manufactured by the Otto Kuehne Preserving Company, Topeka, and sold by J. C. Taupert, Topeka. This is a cider vinegar, but is low in acetic acid. Illegal.

Insp. No. 7885, serial No. 4452. Vinegar, Silver Leaf brand, manufactured by the Otto Kuehne Preserving Company, Topeka, and sold by Cope & Co., Topeka. Cider vinegar. Passed.

Insp. No. 9407, serial No. 4463. Vinegar, manufactured by Lawrence Kipp, Horton, Kan., and sold by Sherman Pettet, Horton. The low acidity as well as the low specific gravity and solids indicate that this is a watered vinegar. Illegal.

OYSTERS.

Insp'tor's No.	Serial No.	JOBBER.	SELLER.	Weig.		Percentage of solids in—			Class.
				Meats.	Liquor.	Meats.	Liquor.	Sample.	
7998	4883	T. E. Travers & Co., Baltimore, Md.	W. A. Guenther & Co., Lawrence	455	75	17.72	8.05	16.01	Passed.
7999	4884	T. E. Travers & Co., Baltimore, Md.	E. Anderson, Lawrence	460	60	18.64	6.17	17.66	Passed.
7000	4885	Carr Heckert Fish and Oyster Co., Kansas City, Mo.	R. B. Wagstaff, Lawrence	405	50	15.10	8.77	15.92	Passed.
7001	4886	J. A. McCready & Co., Baltimore, Md.	Frank Meierhoffer, Lawrence	380	55	17.80	6.59	16.35	Passed.
7002	4887	Booth Fishery Co., Kansas City, Mo.	W. R. Smith & Son, Topeka	340	137	14.30	6.23	11.93	Passed.
7003	4888	Booth Fishery Co., Kansas City, Mo.	W. R. Smith & Son, Topeka	440	40	18.32	9.22	17.54	Passed.
7004	4889	W. R. Smith & Son, Topeka, Kan.	S. G. Mullin, Market, Topeka	570	57	18.80	8.90	17.89	Passed.
7005	4890	Atlantic Packing Co., Baltimore, Md.	Topeka Fish & Oyster Co., Topeka	395	75	20.10	10.02	18.49	Passed.
7006	4891	Booth Fishery Co., Kansas City, Mo.	A. A. Schmidt, Topeka	415	95	20.66	8.22	18.34	Passed.
6565	4896	Chesapeake Fish and Oyster Co., Kansas City, Mo.	J. Smith, Hutchinson	370	45	14.74	8.69	14.09	Passed.
6687	4896	Carr Hackert Fish and Oyster Co., Kansas City, Mo.	Lehr & Son, Hutchinson	395	75	15.24	5.48	13.75	Passed.
6671	4897	T. E. Travers & Co., Baltimore, Md.	J. T. Round, Hutchinson	360	Leaked	out.			Passed.
9676	4904	Carr Hackert Fish Co., Atchison, Kan.	F. M. Lodgegan, Atchison	345	90	17.68	7.64	15.58	Passed.
9677	4905	Booth Fishery Co., Kansas City, Mo.	Jas. Bossam Co., Atchison	330	170	16.16	5.57	12.60	Passed.
9678	4906	Producers Sales Co., Chicago, Ill.	Putman & Maage, Atchison	345	150	22.38	11.98	17.62	Passed.
9679	4907	Carr Heckert Fish and Oyster Co., Kansas City, Mo.	Bosam Co. & Poshler, Atchison	353	125	16.92	7.91	14.51	Passed.
9680	4908	Booth Fishery Co., Kansas City, Mo.	John J. Intfen, Atchison	290	80	25.60	9.71	22.16	Passed.
9681	4909	T. E. Travers & Co., Baltimore, Md.	K. Hoffman, Atchison	340	65	20.38	7.44	18.30	Passed.

VINEGAR.

Insp. No. 9446, serial No. 4464. "Rexamber Cane Sugar Vinegar," manufactured by the H. J. Heinz Company, Pittsburgh, Pa., and sold by A. Arand & Son, Marysville, Kan. This vinegar as put out by the manufacturers and labeled on the barrel is passed when sold as such. In this case the retailer had placed a large card marked "Cider Vinegar" in front of the barrel in the cellar, and the sample as sold to the inspector was not labeled to show the true nature of the vinegar as required by the regulations. It was therefore illegally sold.

Insp. No. 9454, serial No. 4465. Vinegar, Silver Leaf brand, manufactured by Otto Kuehne Preserving Company, Topeka, and sold by the Riley County Coöperative Association, Randolph. Pure cider vinegar, though a little low in acidity. Passed.

Insp. No. 9455, serial No. 4466. Vinegar, manufactured by Nevins Bros., Blue Rapids, and sold by W. H. Boughner, Blue Rapids. The percentage of ash is a little low, otherwise good cider vinegar. Passed.

Insp. No. 9458, serial No. 4467. Vinegar, manufactured by Nevins Bros., Blue Rapids, and sold by S. N. Flack, Blue Rapids. The low specific gravity and acidity and the general appearance of this vinegar indicate that it has been watered. Illegal.

Insp. No. 9474, serial No. 4468. Vinegar, manufactured by William Graham, Barnes, and sold by A. Ballard, Barnes. The specific gravity and acidity are low for this vinegar. Illegal.

Insp. No. 9477, serial No. 4469. Vinegar, manufactured by Elvie Weeks, Vermillion, and sold by C. W. Granger, Vermillion. This vinegar is below standard and apparently watered. Illegal.

Insp. No. 6518, serial No. 4470. "Prairie King Cider Vinegar." manufactured and sold by the Wichita Vinegar Works, Wichita. A good cider vinegar. Passed.

Insp. No. 6527, serial No. 4471. Vinegar, manufactured by the Theo. Poehler Mercantile Company, Emporia, and sold by J. N. Hanna, Cedar Point. This vinegar is low in acidity. Illegal.

Insp. No. 9482, serial No. 4472. Vinegar, manufactured by William Edie, —, New Mexico, and sold by Henry Precht, Linn, Kan. This vinegar is low in respect to specific gravity, acidity and ash. Illegal.

Insp. No. 9478, serial No. 4473. Vinegar, manufactured by William Mooney, Centralia, and sold by E. W. Clark & Co., Centralia. This vinegar is below standard in acidity. Illegal.

Insp. No. 5560, serial No. 4756. "Bar—B—Q Vinegar," manu-

factured by the Jett-Wood Grocery Company, Wichita, gave tests showing it to be o' vinegar. Passed.

Insp. No. 556 serial No. 4757. "Harvest Home Vinegar," manufactured by the Jett-Wood Grocery Company, Wichita. Tests satisfactory for cider vinegar. Passed.

Insp. No. 5562, serial No. 4758. "Harvest Home Vinegar," manufactured by the Jett-Wood Grocery Company, Wichita. Tests satisfactory for cider vinegar. Passed.

APPLE CIDER.

Insp. No. 9452, serial No. 4474. Apple cider, manufactured by the National Fruit Products Company, Memphis, Tenn., and sold by Santa Solt, Randolph, Kan. Jobber, Byron Willcuts, Topeka. The specific gravity and ash are low for apple cider, and it contains saccharine. Illegal.

Insp. No. 9453, serial No. 4475. Apple cider, manufactured by the Hund Wine Company, Leavenworth. Jobber, the Bittman-Todd Grocery Company, Leavenworth; retailer, C. Karr, Randolph. The specific gravity and solids are low for apple cider. Illegal.

Insp. No. 9480, serial No. 4476. Apple cider, manufactured by the Hund Wine Company, Leavenworth. Jobber, the Bittman-Todd Grocery Company, Leavenworth; retailer, A. J. Leonard, Blaine. The specific gravity, solids and ash are low, showing evidence of having been watered. Illegal.

WATER SURVEY No. 12.

By E. H. S. BAILEY, Ph. D., Director, and C. C. YOUNG, M. S., Chemist.

Following are analyses of samples of water made in our laboratory during the year 1911. These are principally miscellaneous supplies which have not been reported to the BULLETIN in our previous water survey reports.

426. Burden, proposed city supply. The well was blasted from solid rock. Engineers state that this well will not yield sufficient water for city supply.

427. Burden, sample sent in from proposed city supply, by engineer in charge of the spring. This analysis shows considerable evidence of pollution. Mr. Veach has made a sanitary survey of the surroundings. He assures us that contamination is purely local and can be removed by properly protecting the spring.

SANITARY ANALYSES OF PROPOSED CITY, SCHOOL, AND MISCELLANEOUS WATER SUPPLIES—CONTINUED.
(Parts per million.)

Number.....	City.	Dates, 1911.....	Oxygen consumed.....	Nitrogen in free NH ₃	Nitrogen in alb. NH ₃	Nitrogen in NO.....	Nitrogen in NO ₂	Iron.....	Chlorine.....	Sulphates SO ₄ ...	Solids.....
447	urton: c J. W. Hempstead.....	10-28	0.450	0.164	0.060	None.	10.800	N. D.	50.2	N. D.	889.00
451	d J. W. Hempstead.....	10-28	0.610	0.114	0.182	None.	32.000	N. D.	86.0	N. D.	700.00
452	Barns..... Council Grove: g W. E. Crawford.....	10-9	4.360	0.064	0.116	0.0076	4.000	N. D.	44.0	N. D.	1,268.00
453	g W. E. Crawford.....	10-18	0.090	0.080	0.218	None.	0.300	N. D.	6.0	N. D.	186.00
454	Cedar Vale.....	10-13	3.900	0.062	0.268	None.	0.900	N. D.	6.0	N. D.	212.00
454	Cottonwood Falls.....	10-10	1.680	0.022	0.124	None.	1.600	0.7	8.0	29.78	804.00
455	Cawey..... c J. Bigelow..... g C. J. Bigelow.....	10-11	0.372	0.062	0.068	0.001	5.000	N. D.	16.0	N. D.	404.00
457	Cherryvale..... g A. B..... g J. A. Brady.....	10-5 10-6	0.510 5.100	0.108 0.290	0.062 0.254	0.010 None.	3.000 None.	N. D. N. D.	23.0 12.0	N. D. N. D.	667.00 180.00
458	Dodge City..... g J. A. Brady..... g C. A. Milton..... g C. A. Milton.....	12-19 12-19	6.100 6.400	74.500 6.000	4.000 3.400	0.200 0.200	5.000 5.000	N. D. N. D.	82.0 98.0	N. D. N. D.	712.00 828.00
459	Dearing..... g C. A. Milton..... g C. A. Milton.....	9-16 9-16	6.040 0.204	0.088 0.018	0.192 0.040	0.060 None.	2.500 2.000	N. D. Trace.	18.6 23.0	52.96 54.30	372.00 845.00
460	Ellsworth..... g R. F. Maloby..... g R. F. Maloby..... g R. F. Maloby.....	10-14 10-19	None. None.	0.040 0.046	0.065 0.060	None. 0.002	5.000 4.000	N. D. N. D.	17.0 8.0	N. D. N. D.	363.00 99.00
463	Goodland..... g R. F. Maloby..... g R. F. Maloby.....	11-16 11-16	None. 0.451	0.080 0.074	0.070 0.180	None. None.	5.000 5.000	N. D. N. D.	29.0 16.0	34.04 40.00	297.00 862.00
464	Great Bend..... g R. F. Maloby.....	11-16	Sample too small	1.240	0.180	None.	N. D.	N. D.	560.0	108.00	1,374.00
466	Hillsboro..... g A. Schweitzer..... g A. Schweitzer..... g A. Schweitzer.....	11 11 6-28 6-28	None. 0.120 None.	0.018 0.022 0.044	0.070 0.082 0.126	None. Trace. None.	5.000 None. 1.000	N. D. 1.700 0.300	86.0 14.0 14.0	100.00 1150.40 385.70	863.00 1,648.00 1,089.00
467	Holton..... g Chas. Siever..... g Chas. Siever.....	6-28 9-27 12-7	None. 0.080 0.080	0.060 0.034	0.112 0.116	None. 0.002	4.000 5.000	0.700 3.500	15.0 403.8	S. am't. N. D.	406.00 985.09 680.00
468	Hutchinson..... g Chas. Siever..... g G. M. Schwars..... g C. E. Durand.....	10-24 11-18	0.279 0.051 0.372	0.062 0.062 0.066	0.062 0.096 0.068	0.008 3.000 None.	5.000 1.000 1.000	N. D. N. D.	20.0 153.0 10.0	54.80 I. am't. Trace.	985.09 701.00 196.00

469	Herrington: a Burns & McDonald..... b Burns & McDonald..... c Burns & McDonald..... d Burns & McDonald.....	1,680 3,040 None 3,600	N. D. N. D. N. D. N. D.	None. None. None. 0.040	0.500 0.500 1.000 0.100	2.0 2.5 1.5 2.5	26.0 26.0 14.0 11.0	161.40 160.70 36.20 390.00	616.00 602.00 425.00 390.00
470	Hiauwatha c..... 9-15 b J. W. Leibengood..... 9-15 c J. W. Leibengood..... 9-15 Junction City..... 6-20	0.044 0.563 0.014 0.083 None. 0.080	0.062 None. 0.083 None. 0.134	1.500 24.100 10.000	N. D. N. D. N. D. 0.10	9.4 6.5 84.0 73.39	16.40 2.20 N. D. 73.39	380.00 331.00 950.00 683.00	390.00 331.00 950.00 683.00
473	Jetmore: a A. B. Scott..... 9-16 b A. B. Scott..... 9-16	0.980 0.400 0.088	0.096 0.096 0.010	3.500 1.500	N. D. N. D.	17.8 12.2	N. D. N. D.	400.00 389.00	400.00 389.00
474	Kinsley: a M. A. Wilson..... 9-16 b M. A. Wilson..... 9-16 c M. A. Wilson..... 9-16 d P. A. Pearson..... 4-28	1,060 0.140 None. 2,160	0.148 0.048 0.138 None.	4.000 0.100 0.100 None.	0.1 0.5 1.5 Trace.	48.0 129.0 84.8 4.0	169.80 289.60 149.40 None.	681.00 793.00 450.00 161.00	681.00 793.00 450.00 161.00
480	Larned: a E. E. Frizell..... 11-28 b E. E. Frizell..... 11-28 c E. E. Frizell..... 11-28 Manhattan..... 10-6 Oberlin..... 10-31	0.588 1,160 None. 0.080 0.890	0.062 0.022 0.090 0.118 0.090 0.074	0.500 0.800 0.100 None. 1.500	N. D. N. D. N. D. N. D. N. D. 0.7	65.5 340.4 144.0 12.0 18.0	687.00 94.00 92.00 N. D. 88.50	1345.00 982.00 585.00 849.00 412.00	1345.00 982.00 585.00 849.00 412.00
482	Ossage City: a E. B. Packer..... 6-28 b E. B. Packer..... 6-28 c E. B. Packer..... 6-28 d E. B. Packer..... 6-28 Paola..... 11-28	5,040 5,340 4,800 4,920 5,990	0.830 0.440 0.840 0.450 0.314	None. None. None. None. 1.000	0.7 0.5 0.5 0.5 N. D.	7.0 7.0 7.0 7.0 4.0	96.00 N. D. N. D. N. D. S. A.	281.00 285.00 278.00 286.00 284.00	281.00 285.00 278.00 286.00 284.00
489	Protection: a W. G. Ramey..... 8-28 b W. G. Ramey..... 8-28 c W. G. Ramey..... 7-24	0.440 0.370 0.600	0.086 0.094 0.132	0.300 0.100 10.000	N. D. N. D. N. D.	43.4 18.6 40.0	N. D. N. D. N. D.	372.00 314.00 1991.00	372.00 314.00 1991.00
492	Pittsburg..... 7-24	7,500	1.200	3.000	N. D.	51.0	N. D.	584.00	584.00
496	Sabetha: a R. Bottiger..... 11-27 b R. Bottiger..... 11-27 c R. Bottiger..... 11-27 d R. Bottiger..... 11-27 e R. Bottiger..... 11-27	None. 2,380 7,200 0.188 1,380	0.074 0.206 0.010 0.094	1.000 None. 2.800 0.800 0.0075	N. D. N. D. N. D. N. D. N. D.	7.0 62.0 11.0 59.0	N. D. N. D. N. D. N. D. N. D.	584.00 600.00 353.00 665.00	584.00 600.00 353.00 665.00
497	Syracuse: a R. M. VanDuzer..... 11-6 b R. M. VanDuzer..... 11-6 c R. M. VanDuzer..... 9-27	0.744 0.068 None.	0.124 0.006 0.110	2.500 0.100 1.500	Trace. None. 2.0	25.0 18.0 31.0	369.60 408.40 81.40	869.00 967.00 487.00	869.00 967.00 487.00

Too small a sample.

428. Enterprise, proposed city supply from a well. This analysis shows considerable evidence of pollution. Advice was given that the well should not be used as a city supply until properly cleaned out and several subsequent analyses made to see whether or not the well was receiving pollution from some outside source that could not be eliminated.

429. Englewood, received from H. V. Olive, proposed city supply. Shows considerable evidence of pollution, and he was advised that city authorities consult with State Sanitary Engineer, which was done, and they are now prospecting for another supply.

430. Emporia, samples received from J. W. Mitchell, proposed city supply. *a* Neosho river. *b* Well in Neosho bottom. *c* Cottonwood river. Both river waters show marked evidence of pollution. The well water, although showing no evidence of pollution, is very hard, the hardness being due principally to calcium bicarbonate (the substance which causes temporary hardness).

431. Glasco, samples sent in by Leo Noel. They show no evidence of pollution. Matter was turned over to State Sanitary Engineer for further investigation.

432. Jamestown, samples received from Ed Pratt. *a* Old city well back of city hall. *b* Missouri Pacific well. Missouri Pacific well was analyzed to see if it would be satisfactory as an emergency supply for the city of Jamestown. The old city well was analyzed to show that it was unfit to be used even as an emergency supply.

433. Kinsley, these samples were received from A. L. Moe. *a* West of town. *b* East of town two miles. *c* South of town in Arkansas bottom. *d* Three miles south of town, across the river. *e* South of town, across the river. *f* East of town, in sand hills. *g* East of river, in sand hills. *h* East of river, in sand hills. *i* Arkansas river bottoms. These analyses were made in an attempt to locate a soft water supply either in the Arkansas bottoms or west of town so they would not have to pipe across the river. No decision has been made yet as to source of supply.

434. Lyndon, received from W. T. Hussey. As far as chemical analysis can show, this water is not polluted.

435. Liberal, sent in by Mrs. Krahan, city clerk. It was proposed to use this in extension for city supply, or a new well in same locality.

436. Larned, sent in by E. E. Frizell as proposed supply for insane asylum. *b* Would be unfit for use under any circumstances except for mineral water.

437. Lyndon, sent in by L. T. Hussey. Water too high in nitrates to make a satisfactory city supply.

438. Manhattan, sample collected and sent in at request of Professor Hoad, who took up the matter with Manhattan authorities.

439. Mound Valley, sent in by Dr. H. A. Henson as proposed city supply, sample taken from Pumpkin creek. Doctor Henson was told that water would be unfit for city supply unless purified by filtration.

440. Manhattan, proposed city supply, sent in by O. E. Noble. Ice plant well.

441. Smith Center, sample brought to laboratory by L. M. Bowman, engineer of water works at Smith Center. Mr. Bowman proposed to cut this water out of city supply. The amount of iron would render it unfit for domestic use.

SCHOOL SUPPLIES.

442. Culver, sent in by Mrs. Jesse Dickinson. Chemical analysis shows no marked evidence of pollution.

443. Garfield, sent in by N. O. Waymire, school supply. The water shows no marked evidence of pollution.

MISCELLANEOUS.

445. Anthony, received from Doctor Ressler. It is evident that this water was receiving contamination as indicated by the high nitrites and nitrates. Plans and specifications were forwarded to Doctor Ressler to protect against any chance of pollution.

451. Barnes, received from Dr. Nelson, of Washington. Water furnishes the Barnes hotel. Showed marked evidence of pollution; also had an odor of varnish. Suggested that the wooden storage tank be thoroughly cleaned and the well protected.

452. Council Grove, received from T. B. Haslam, city supply. *a* Taken 1400 feet above intake. *b* Taken 1400 feet below intake. This water was taken from storage reservoir furnishing Council Grove. The microscopic examination revealed several types of diatoms, amœba, and several forms of algæ.

452. Council Grove, *a* and *b* received from W. E. Crawford, taken from city hydrant at schoolhouse. These waters showed marked evidence of pollution.

453. Cedar Vale, received from waterworks superintendent. Sample showed no evidence of pollution.

454. Cottonwood Falls, received from M. C. Newton. Samples sent in and have never been reported as no information was sent with samples. Letters directed to M. C. Newton, Cottonwood Falls, were not answered.

456. Caney, G. J. Bigelow. *a* Well of American Zinc Company. *b* Well of the same company. Both samples showed marked evidence of pollution. It was advised that the water be not used unless boiled. *b* Was a dirty cistern. Advised that it be cleaned out.

457. Cherryvale, received from James A. Brady. *a* Filter effluent from contact filter at Cherryvale sewage disposal plant. *b* Pool in Drum creek where city sewage enters creek.

458. Dodge City, sample sent in by Doctor Milton. In the construction of the Dodge City wells, they were not protected satisfactorily and during the wet time surface water got into the city wells. *a* This analysis was made to determine whether or not the water had come back to its normal condition. It was found that the water had not reached its normal state. *b* The second water showed the water to be approximately in its normal condition. *c* This was further confirmation that the water had reached its normal condition, for it is very similar in character to the water when the well was put down in May, 1910.

459. Deering, sent in by D. O. Shile. This water is from one of the soft water springs in the sandstones of the Lawrence shales. There are some twelve or fifteen of these springs in eastern Kansas and all of them evidently are very fine drinking water.

460. Ellsworth, sent in by R. F. Malaby. These analyses were made to determine the relative value of each supply, for use in the new insane asylum, if Ellsworth is finally decided upon for the site. *a* Bickerdykes Home. This is a very soft water and indicates that a good supply can be found in and about Ellsworth. *b* Salt plant well. This water is also soft. *c* From well on farm. This is a hard water and should not be considered as a supply if *a* and *b* are available.

463. Goodland, small sample of artesian well water, 1500-foot level. Showed about 14 grams per liter of sodium chloride. Unfit for drinking or irrigation purposes.

464. Great Bend, O. W. Dawson. Analysis made for proposed supply for insane hospital. This is a soft water and shows no evidence of pollution.

466. Hillsboro, received from A. Schweitzer. *a* Bored well 30 feet deep, too hard for city supply. *b* Bored well 37 feet deep, too hard for city supply. *c* Fifty feet deep, much softer water than *a* and *b*, and if properly taken care of and surroundings are satisfactory, should make a good supply.

(No number.) Hope. These waters were examined for Dr. J. C. Entz in an attempt to show whether they were contaminated

by creamery cesspool. They consisted wholly or in part of a putrid, foetid liquid, black from iron sulphide. In fact they were far worse than ordinary sewage.

467. Holton, received from Dr. Chas. Seiver. *a* City supply from three wells, 90 feet to 115 feet deep. *b* School well.

468. Hutchinson. *a* Received from Geo. M. Schwars. This water was the suspected cause of transmittal of typhoid. Examination showed this water badly polluted. *b* Sent to laboratory by C. E. Durand. This water is peddled on the streets of Hutchinson and shows no marked evidence of pollution.

469. Herington, received from Burns & McDonald. *a* Koahl's well. *b* Will's spring. *c* Muncell's spring. *c* Harrison's spring. Proposed city supplies for Herington. Complete analysis and report will be found under special investigation at the close of this report.

470. Hiawatha, received from J. W. Leibengood. *a* Tap water. *b* Messenheimer spring. *c* Well, proposed supply. *b* and *c* were analyzed with the hope that they could be used as an addition to the present supply. The Messenheimer spring proved to be a very good water; the well, however, was considered unfit for use.

472. Junction City, received from H. E. Montgomery, of the Junction City *Union*. This is the Country Club well; it showed no evidence of pollution.

473. Jetmore. *a* County poor farm, dug well. *b* City Hotel, dug well. Both showed considerable evidence of pollution.

474. Kinsley, *a*, *b*, and *c* received from M. A. Wilson, proposed city supplies; *d* proposed supply received from —

480. Larned, received from E. E. Frizell, proposed supply for insane asylum.

482. Manhattan, Rebekah Odd Fellows Home, received from E. E. Piersol, shows no evidence of pollution.

485. Oberlin, received from Mr. Ottis Benton. City supply.

486. Osage City, *a* outlet from south filter; *b* inlet to south filter; *c* outlet from north filter; *d* inlet to north filter. These samples were sent in by E. B. Packer at the request of Professor Hoad. The analyses were made to observe the effect of filtration upon the character of the water.

489. Paola, sample of city water received from Ira Land, water-works superintendent. This water was turbid and contained 112 parts per million of suspended matter. Results of this analysis showed the water to be unfit for domestic use. City officials were advised to correspond with sanitary engineer, Professor Hoad, to obtain information as to best method of purifying this water.

491. Protection. *a* City well No. 1. *b* City well No. 2. These waters show marked pollution. It was advised that evidence be secured as to cause of pollution.

492. Pittsburg, water contained considerable organic matter.

496. Sabetha, analysis made of the sewage of city of Sabetha and creek into which sewage empties to see whether or not the sewage would cause a nuisance.

497. Syracuse, received from R. M. Vanduzer, proposed city supply; *a* from well in Arkansas underflow; *b* from the Santa Fe well, 185 feet deep, which goes to the red beds; underflow cased out.

498. Sylvan Grove, sent in at request of Professor Hoad, appears to be a very satisfactory water.

501. Topeka, *a* Mutual Laundry; *b*, *c*, and *d* received from park commissioner; *b* old well; *c* new well; *d* spring; *e* received from W. J. Bond at request of Doctor Crumbine. Relatively hard water, but shows no evidence of pollution; *f* and *g* received from Jesse Shaw, waterworks superintendent, source not known; *h* Dr. Stewart Magee, mineral water.

502. Waverly, city supply. These three waters were taken from different wells which supply the city of Waverly. They all seem to be in relatively good condition.

503. Wellington, received from Doctor Millington, proposed supply; *a* Savage well; *b* creek; *c* north well; *d* combination of all three. Results of this analysis show that most of the water used in the city of Wellington is from the creek. Wellington is now prospecting for a new supply.

504. Wichita, received from A. E. Dickson, of the Merchants' Association; *j* received from Jno. A. Harts, commissioner of health. This water, which is to be peddled on the streets, shows no particular evidence of pollution; *k* received from Superintendent Allie. This is a very hard water taken from the shallow wells in the Arkansas underflow.

505. Waverly, received from F. W. Hubbard, water from deep well before and after pumping. The water shows little improvement by cleaning out the well.

507. Wamego, received from D. A. Course, town pump. This water shows considerable evidence of pollution and that pollution is increasing between the two analyses. Mr. Course was advised to take steps towards closing this well, and it is understood that this was done.

508. Yates Center, water from Doctor Roe. This should be subjected to filtration before being used as city supply.

The following analyses were made from artesian well waters sent in from Richfield by Mr. Don Van Wormer.

	Grams per liter.	
	4389	4390
Calcium sulphate (CaSO ₄)	1.827	1.821
Calcium carbonate (CaCO ₃)	.129	.187
Magnesium sulphate (MgSO ₄)	.848	.370
Sodium sulphate (Na ₂ SO ₄)	.890	.421
Sodium chloride (NaCl)	.025	.028
Sodium nitrate (NaNO ₃)	.008	.008
Iron and aluminum oxides (Fe ₂ O ₃ -Al ₂ O ₃)	.004	.015
Silica (SiO ₂)	.081	.041
Total solid matter left on evaporation	2.757	2.836

4389. Well on town site.

4390. Well south of town.

The following are mineral analyses of seven waters received from Herington, Kan. The city of Herington was attempting to locate a supply that would be a satisfactory water for boiler purposes.

No. 4409. Rohl springs. No. 4413. Numsell's spring.

No. 4410. New well. No. 4414. Creech's spring.

No. 4411. Artesian well. No. 4415. Will's spring.

No. 4412. Rock Island springs.

Results hypothetically expressed in parts per million:

Laboratory No.	4409.	4410.	4411.	4412.	4413.	4414.	4415.
Sodium chloride	39.6	39.40	105.6	26.4	19.8	24.75	39.6
Sodium nitrate	6.06	6.06		6.06	6.06	6.06	6.06
Sodium sulphate	8.45	14.87		7.9		29.91	
Magnesium carbonate	159.5	165.66		142.48	146.7	186.55	155.7
Calcium carbonate	188.35	118.60	276.99	170.38	177.4	137.8	126.8
Calcium sulphate	148.81	223.00	1,331.6	64.76	59.90	177.68	192.7
Magnesium sulphate			638.54				
Insoluble residue	19.6	11.80	15.8	13.6	14.00	164.4	21.6
Iron and aluminum oxides	10.00	3.00	10.0	4.0	3.6	24.1	4.8
Total solids	630.37	628.09	2,478.55	435.58	427.36	691.25	547.26

Notice to Physicians Sending the Brains of Animals to be Examined for Rabies.

During the warm weather it is almost impossible to send the brains or heads of animals by express and have them reach their destination in good condition. This is true even when they have been packed in ice. The length of time consumed in transportation is far too uncertain to depend upon ice as a preservative. For this reason, I suggest that the brain be removed and placed in 1 to 2000 bichloride of mercury. Alcohol or formaldehyde will not do as they toughen the tissue.

Specimens will be examined by this department only when the animal has bitten some person.

S. E. GREENFIELD, *Bacteriologist.*

The Second Annual Summer School for Physicians and Health Officers.

The second annual Summer School for physicians and health officers will open at the University at Lawrence June 10th, continuing to and including June 15th. The State Board of Health recognizes the principle that in order to have efficient health officers who will give efficient sanitary service to their respective communities, it requires men especially trained along the lines of public hygiene and sanitation. It is generally conceded by every physician and sanitarian that one may be ever so skillful as a physician or surgeon, and yet make a very poor health officer. It is for the purpose of training physicians in modern sanitary procedure that the State Board of Health, in conjunction with the University School of Medicine, has inaugurated this Summer School.

The course outlined is intended not only to embrace subjects related to the public health, but to in a measure be a post-graduate course for physicians in general, particularly along the lines of communicable diseases.

The State Board of Health and the University extend a most cordial invitation to every physician in the state to attend this second annual Summer School. It is believed that a most profitable and enjoyable time can be spent in the work as outlined for the present session.

The following tentative program is herewith submitted:

THE SECOND ANNUAL SUMMER SCHOOL FOR PHYSICIANS AND HEALTH OFFICERS.

Kansas University, Lawrence, June 10 to 15, inclusive, 1912, under the auspices of the Kansas State Board of Health and the School of Medicine of the University of Kansas. All practitioners and students of medicine are invited to attend. *Course free.*

PROGRAM.

Monday, June 10.

A. M. Registration. Fraser Hall.

P. M. Annual Meeting State Association of Health Officers. Snow Hall.

8:00 P. M. Annual Banquet for Health Officers and Physicians. Eldridge Hotel.

Tuesday, June 11.

8:30 A. M. Opening Second Annual Summer School for Physicians and Health Officers. Snow Hall. Chancellor Strong.

- 9:00 to 11:00 A. M. Laboratory. Dr. T. H. Boughton, Professor of Pathology and Bacteriology, School of Medicine, University of Kansas. Collection of samples, etc.; Methods of examination; Preparation of media.
- 11:00 A. M. Lecture. Water-borne diseases; Epidemiology of Typhoid fever; Methods of control, etc. Allan J. McLaughlin, M. D., Passed Assistant Surgeon, U. S. Public Health and Marine Hospital Service, Washington, D. C.
- 2:00 P. M. Lecture. Water-borne diseases; Cholera, Dysentery, "Winter Diarrhoea," etc. Allan J. McLaughlin, M. D., Passed Assistant Surgeon, U. S. Public Health and Marine Hospital Service, Washington, D. C.
- 3:30 to 5:00 P. M. Laboratory Exercises. Each student performing for himself the work of the morning demonstration. (Optional.)
- 5:00 to 6:00 P. M. Lecture. Water Supplies and Water Purification. Prof. Wm. M. C. Hoad, Engineer, State Board of Health.
- 8:00 P. M. Illustrated Lecture. Insect Carriers of Disease. Prof. S. J. Hunter, Entomologist, University of Kansas.

Wednesday, June 12th.

- 9:00 to 11:00 A. M. Laboratory. Prof. T. H. Boughton.
- 11:00 A. M. Lecture. Epidemic Cerebrospinal Meningitis. Dr. W. H. Frost, Passed Assistant Surgeon U. S. Public Health and Marine Hospital Service, Washington, D. C.
- 2:00 P. M. Lecture. Epidemic Anterior Poliomyelitis. Dr. W. H. Frost, Passed Assistant Surgeon U. S. Public Health and Marine Hospital Service, Washington, D. C.
- 3:30 P. M. Laboratory Exercise. Each student performing for himself the work of the morning (optional). Prof. T. H. Boughton.
- 5:00 P. M. Demonstration. The Interpretation of Water Analysis. Prof. C. C. Young, Chemist, State Water Survey, University of Kansas.
- 8:00 P. M. Illustrated Lecture. Abnormalities. Prof. C. C. McClung, Professor of Zoölogy, University of Kansas.

Thursday, June 13th.

- 9:00 to 11:00 A. M. Laboratory. Prof. T. H. Boughton.
- 11:00 A. M. Lecture and Demonstration. The Principles of Ventilation in the Light of Recent Investigations. Dr. Thos. R. Crowder, Sanitarian, Pullman Company, Chicago, Ill.
- 2:00 P. M. The Principles of Public Sanitation. Dr. Thos. R. Crowder, Sanitarian, Pullman Company, Chicago, Ill.
- 3:30 P. M. Laboratory Exercise. Each student performing for himself the work of the morning (optional). Prof. T. H. Boughton.
- 5:00 P. M. Lecture. Adulteration and Drug Standards. Demonstration. Prof. L. E. Sayre, Dean of the School of Pharmacy and Drug Analyst, State Board of Health, University of Kansas.
- 8:00 P. M. Lecture. The Social Factor in Disease. Prof. F. W. Blackmar, Dean of the Graduate School and Professor of Sociology and Economics, University of Kansas.

Friday, June 14th.

- 9:00 to 11:00 A. M. Laboratory. Disinfectants. Prof. T. H. Boughton, M. D.
11:00 A. M. Lecture and Demonstration. Food Adulteration. Prof. H. L. Jackson, Food Analyst, State Board of Health; Assistant Professor of Chemistry, University of Kansas.
2:00 P. M. Round Table. The Problems of the Physician and the Health Officer. Conducted by Dr. S. J. Crumbine, Secretary State Board of Health.
3:30 P. M. Laboratory Demonstration. Disinfectants. Prof. T. H. Boughton, M. D.
5:00 P. M. Antitoxins, Serums and Vaccines. Prof. T. H. Boughton, M. D.

Saturday, June 15th.

Bell Memorial Hospital, Rosedale, Kan.

- 11:00 A. M. Clinic in Surgical Wards. Doctors Sudler, Sutton and Hertzler.
2:00 to 4:00 P. M. Clinic in Medical and Obstetrical Wards. Doctors Murphy and Guffey.
4:00 to 6:00 P. M. Clinic in Eye, Ear, Nose, and Throat. Doctors Lidikay, May, and others.

Notes.

We no longer look for decayed vegetables in the cellar to discover the cause of typhoid fever, but for the individual or the medium by which the disease germ was transmitted.

When the air of a schoolroom becomes so thick with chalk dust that you can see it, or so foul from lack of proper ventilation that you can smell it, any child who has the grit to protest by "playing hooky" has the sympathy and support of this department.

Where the West Begins.

Out where the handclasp's a little stronger,
Out where a smile dwells a little longer,
 That's where the West begins.
Out where the sun is a little brighter,
Where the snows that fall are a trifle whiter,
Where the bonds of home are a wee bit tighter,
 That's where the West begins.

Out where the skies are a trifle bluer,
Out where friendship's a little truer,
 That's where the West begins.
Out where a fresher breeze is blowing,
Where there's laughter in every streamlet flow-
ing,
Where there's more of reaping and less of sow-
ing—
 That's where the West begins.

Out where the world is in the making,
Where fewer hearts with despair are aching—
 That's where the West begins;
Where there's more of singing and less of sighing,
Where there's more of giving and less of buying,
And a man makes friends without half trying—
 That's where the West begins.

—Arthur Chapman in *Denver Republican*.

BULLETIN

OF THE

Kansas State Board of Health.

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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DRACON, Registrar.

No. 5.

MAY, 1912.

VOL. VIII.

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Treatment of Tetanus with Large Doses of Tetanus Antitoxin, page 126.

"I go a fishing"—Peter.

Swat the fly, hip and thigh.

All catching diseases are preventable.

The typhoid fly is the season's greatest danger.

Many a man looking for sympathy really needs two swift kicks
properly placed.

Keep your city clean, your premises clean, yourself clean, and
you will avoid most if not all of the infectious diseases.

The Kansas State Board of Health has added the popular "post
card" as an additional way of spreading the gospel of good health.

Anonymous communications addressed to the State Department
of Health only add to the burden of our porter in removing the
waste paper.

The boy scouts is the most potential anti-fly organization in
America, if they are once aroused to their opportunities and ability
in this direction.

VITAL STATISTICS

Reported to the Kansas Board of Health for April, 1912.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.		March.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Births...	Deaths..
The State... totals.	27	1	38	3	137	0	22	0	554	2		
April, 1911.....	20	2	37	4	316	11	244	0	1,854	2	2,914	1,668
*Allen.....											89	14
*Anderson.....											10	10
*Atchison.....	1	0	0	0	0	0	0	0	20	0	18	10
*Barber.....											14	7
*Barton.....	1	0	3	1	2	0	0	0	0	0	47	16
*Bourbon.....	0	0	0	0	2	0	0	0	42	0	17	17
*Brown.....	1	0	4	0	1	0	1	0	0	0	38	21
*Butler.....	0	0	0	0	0	0	0	0	0	0	36	15
*Chase.....	0	0	0	0	0	0	0	0	0	0	14	8
*Chautauqua.....	2	0	1	1	0	0	0	0	6	0	28	10
*Cherokee.....	0	0	0	0	5	0	0	0	79	0	77	40
*Cheyenne.....	4	0	0	0	0	0	0	0	0	0	13	3
*Clark.....											2	2
*Clay.....	0	0	0	0	0	0	0	0	0	0	14	16
*Cloud.....	0	0	0	0	0	0	0	0	0	0	21	15
*Coffey.....											20	15
*Comanche.....											2	2
*Crawley.....	0	0	0	0	0	0	0	0	6	0	48	25
*Crawford.....	0	0	0	0	4	0	0	0	16	0	54	34
*Decatur.....	0	0	0	0	0	0	0	0	0	0	6	3
*Dickinson.....											42	23
*Doniphan.....	0	0	1	0	2	0	0	0	5	0	24	13
*Douglas.....	1	0	3	0	3	0	0	0	0	0	20	9
*Edwards.....	0	0	0	0	2	0	0	0	0	0	20	10
*Ellis.....	0	0	0	0	0	0	0	0	24	0	16	12
*Ellsworth.....	0	0	0	0	0	0	0	0	0	0	16	12
*Finney.....	0	0	1	0	0	0	0	0	0	0	11	11
*Ford.....	0	0	1	0	0	0	0	0	0	0	7	7
*Franklin.....	0	0	0	0	1	0	0	0	1	0	15	9
*Gary.....	0	0	0	0	0	0	0	0	3	0	29	21
*Gove.....	0	0	0	0	0	0	0	0	1	0	22	9
*Grant.....	0	0	0	0	0	0	0	0	0	0	12	9
*Graham.....	0	0	0	0	0	0	0	0	1	0	15	2
*Gray.....	0	0	2	0	1	0	0	0	0	0	2	1
*Greely.....	0	0	0	0	0	0	0	0	0	0	5	5
*Greenwood.....	0	0	0	0	0	0	0	0	2	0	1	0
*Hamilton.....	0	0	0	0	0	0	0	0	0	0	17	21
*Harper.....	0	0	0	0	0	0	0	0	0	0	11	2
*Harvey.....	0	0	0	0	0	0	0	0	0	0	26	9
*Haskell.....											41	20
*Hodgeman.....	0	0	0	0	0	0	0	0	6	0	2	2
*Jackson.....	2	1	0	0	2	0	0	0	0	0	3	0
*Jefferson.....	0	0	0	0	0	0	0	0	0	0	21	12
*Jewell.....	0	0	0	0	0	0	0	0	1	0	21	18
*Johnson.....											36	21
*Kearny.....	0	0	0	0	0	0	0	0	0	0	32	19
*Kingman.....	0	0	0	0	0	0	0	0	3	0	1	4
*Kiowa.....	0	0	0	0	0	0	0	0	0	0	23	17
*Labette.....	0	0	0	0	0	0	0	0	0	0	27	3
*Lane.....	0	0	0	0	0	0	0	0	8	1	29	16
*Leavenworth.....	0	0	0	0	0	0	0	0	0	0	4	1
*Lincoln.....	0	0	0	0	0	0	0	0	0	0	18	27
*Linn.....											19	5
*Logan.....	0	0	0	0	0	0	0	0	0	0	36	15
*Lyon.....	0	0	0	0	0	0	15	0	2	0	6	6
*Marion.....	0	0	0	0	0	0	0	0	0	0	26	28
*Marshall.....	0	0	0	0	0	0	0	0	0	0	45	18
*McPherson.....	0	0	0	0	8	0	0	0	6	0	57	18

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.		March.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Births..	Deaths..
Meade.....	0	0	0	0	2	0	0	0	0	0	20	5
Miami.....	0	0	0	0	0	0	0	0	0	0	31	7
Mitchell.....	0	0	0	0	12	0	0	0	1	0	28	7
Montgomery.....	0	0	1	0	0	0	0	0	10	0	46	27
* Morris.....	0	0	0	0	0	0	0	0	0	0	12	11
Morton.....	0	0	0	0	0	0	0	0	0	0	8	0
Nemaha.....	0	0	0	0	0	0	0	0	0	0	42	14
Neosho.....	0	0	0	0	5	0	0	0	41	0	39	18
Ness.....	0	0	0	0	0	0	0	0	0	0	15	4
Norton.....	0	0	0	0	0	0	0	0	0	0	16	9
Osage.....	1	0	0	0	2	0	0	0	0	0	27	28
* Osborne.....	0	0	0	0	0	0	0	0	0	0	21	9
Ottawa.....	0	0	0	0	4	0	0	0	0	0	27	11
Pawnee.....	0	0	0	0	0	0	0	0	0	0	16	8
Phillips.....	0	0	0	0	0	0	0	0	0	0	26	8
* Pottawatomie.....	0	0	0	0	0	0	0	0	0	0	28	15
Pratt.....	0	0	1	1	6	0	0	0	1	0	18	7
Rawlins.....	0	0	0	0	0	0	0	0	0	0	10	0
* Reno.....	0	0	1	0	2	0	0	0	0	0	40	10
Republic.....	0	0	0	0	0	0	0	0	0	0	31	18
Rice.....	0	0	0	0	0	0	0	0	0	0	44	11
Riley.....	0	0	0	0	9	0	0	0	1	0	30	20
Rooks.....	0	0	1	0	0	0	0	0	0	0	23	6
Rush.....	0	0	0	0	0	0	0	0	0	0	25	9
Russell.....	0	0	1	0	0	0	0	0	0	0	15	7
Saline.....	0	0	0	0	19	0	0	0	0	0	38	15
* Scott.....	0	0	1	0	0	0	0	0	0	0	0	0
Sedgewick.....	0	0	0	0	0	0	0	0	0	0	39	12
Seward.....	0	0	0	0	0	0	0	0	0	0	16	3
Shawnee.....	0	0	0	0	0	0	0	0	0	0	26	21
Sheridan.....	0	0	0	0	0	0	0	0	0	0	4	1
Sherman.....	0	0	0	0	0	0	0	0	0	0	8	2
* Smith.....	0	0	0	0	0	0	0	0	0	0	18	15
* Stafford.....	0	0	0	0	0	0	0	0	0	0	28	14
* Stanton.....	0	0	0	0	0	0	0	0	0	0	0	1
Stevens.....	2	0	0	0	0	0	0	0	0	0	7	0
Sumner.....	0	0	0	0	2	0	0	0	28	0	51	28
* Thomas.....	0	0	0	0	0	0	0	0	0	0	8	0
* Trego.....	0	0	0	0	0	0	0	0	2	0	3	3
Wabaunsee.....	0	0	0	0	0	0	0	0	2	0	14	9
* Wallace.....	0	0	0	0	0	0	0	0	0	0	0	1
* Washington.....	0	0	0	0	0	0	0	0	0	0	27	16
Wichita.....	0	0	0	0	0	0	0	0	0	0	2	0
Wilson.....	0	0	1	0	2	0	0	0	5	0	48	22
Woodson.....	0	0	0	0	0	0	0	0	0	0	11	13
Wyandotte.....	0	0	0	0	1	0	0	0	0	0	26	26
Cities:												
Fort Scott.....	1	0	0	0	24	0	0	0	15	1	9	14
Atchison.....	0	0	0	0	5	0	0	0	10	0	17	19
Coffeyville.....	1	0	0	0	0	0	0	0	0	0	29	15
Kansas City.....	7	0	7	0	8	0	0	0	13	0	220	188
Leavenworth.....	0	0	1	0	0	0	1	0	0	0	24	25
* Parsons.....	0	0	0	0	0	0	0	0	0	0	22	10
Pittsburg.....	0	0	2	0	3	0	0	0	82	0	41	24
Topeka.....	1	0	3	0	2	0	0	0	6	0	80	76
Wichita.....	2	0	2	0	0	0	0	0	3	0	74	60
† Lawrence.....	0	0	0	0	0	0	0	0	0	0	18	12
† Independence.....	0	0	0	0	1	0	0	0	2	0	14	9
Hutchinson.....	0	0	0	0	1	0	0	0	2	0	26	24

* No report from county health officers.

† Births and deaths reported with cities of first class. Reports from cities over 10,000 population not included in county returns.

DEATHS AND BIRTHS IN KANSAS, Month of March, 1912.

DEATHS.

Stillbirths not included.

Typhoid fever.....	18
Smallpox.....	0
Measles.....	10
Scarlet fever.....	6
Whooping cough.....	18
Diphtheria.....	9
Dysentery.....	3
Tuberculosis, all forms.....	112
Cancer, all forms.....	96
Rheumatism, all forms.....	18
Diabetes.....	26
Other general diseases.....	56
Meningitis.....	74
Cerebral hemorrhage.....	75
Paralysis.....	47
Other diseases nervous system.....	50
Organic heart disease.....	140
Other diseases circulatory system.....	44
Broncho-pneumonia.....	127
Pneumonia.....	124
Other diseases respiratory system.....	52
Diarrhea and enteritis (under 2 years)....	31
Diarrhea and enteritis (2 years and over),	14
Appendicitis.....	10

Diseases of liver and adnexa.....	26
Peritonitis.....	9
Other diseases digestive system.....	31
Acute nephritis.....	10
Bright's disease.....	36
Other diseases genito-urinary system.....	19
The puerperal state.....	24
Diseases of the skin, etc.....	6
Diseases of the bones, etc.....	4
Malformations.....	30
Diseases of early infancy.....	103
Old age.....	66
Suicides.....	10
Accidents.....	59
Homicides.....	4
Ill-defined diseases.....	34
Total deaths.....	1,675
Less delayed reports.....	7
Net for March.....	1,668

BIRTHS.

Males.....	1,478
Females.....	1,436
White, 2,885. Colored, 79.	
Total births, 2,914.	
Stillbirths, 91.	

AGES AT DATE OF DEATH.

Ages.	No.
-1.....	235
1-2.....	72
3-5.....	35
6-10.....	25
11-15.....	27
16-20.....	52
21-25.....	48
26-30.....	53
31-35.....	54
36-40.....	62
41-45.....	61
46-50.....	75
51-60.....	168
61-70.....	235
71-80.....	272
81-90.....	137
91-100.....	8
100-+.....	2
Unknown.....	4
Total.....	1,675

SEX.	
Males.....	925
Females.....	750
COLOR.	
White.....	1,534
Chinese.....	0
Indian.....	2
Black.....	139
NATIONALITY.	
Native.....	1,424
Foreign.....	213
Unknown.....	38
SOCIAL CONDITION.	
Single.....	595
Married.....	725
Widowed.....	306
Divorced.....	11
Unknown.....	38

DRUG ANALYSIS No. XL.

L. E. SAYRE, Director; L. D. HAVENHILL, Chief; G. N. WATSON, Analyst; C. M. STERLING, Microscopist.

The following report issued from the drug laboratory comprises, among other things, a careful investigation of the peroxides of hydrogen on the market. It is gratifying to note that these preparations uniformly reach the standard of 3 per cent H_2O_2 as prescribed by the pharmacopœia. There is greater variation, however, in the acidity, namely, from 1.4 to 4.38. The pharmacopœia requires a slight acidity. The test reads as follows:

If to 25 cc. of the solution 5 cc. tenth-normal potassium hydroxide V. S. be added, and the mixture be evaporated to about 10 cc., and 3 drops of phenolphthalein T. S. added, not less than 2.5 cc. of tenth-normal sulphuric acid V. S. should be required to discharge the red color of the solution after continued boiling (limit of free acids).

The figures recording the acidity reported in the sixth column will be understood as follows: When the pharmacopœial test is applied after the tenth-normal potassium hydroxide V. S. is added and then titrated back by decinormal sulphuric acid V. S., the amount of acid required for this titration ranges between 1.4 and 4.38. It will be noted the pharmacopœia requires that there should not be less than 2.5 cc. of acid to restore the neutral point.

TINCTURE OF GINGER. Attention should be called to the Rexall Jamaica ginger, which contains 64.5 per cent of alcohol. This is below the normal standard for tincture of ginger, and if sold as the official tincture of ginger would be considered as illegal. The essence of Jamaica ginger, No. 5290A, King's soluble essence of Jamaica, containing 26 per cent of alcohol, can not be considered as an official tincture of ginger, and should not be sold as the medicinal article.

Other preparations are reported, each having their essential constituents noted.

We desire to call attention to some Federal rulings, which are of interest to the drug trade in general, under date of February 23, 1912. A decision is made with regard to sweet oil, to the effect that it is not correct to label cottonseed oil as sweet oil. The only oil to which the term "sweet oil" may be correctly applied is olive oil.

INFANT SYRUPS. A notice of judgment (No. 1277, 2-24-12) is

to the effect that an infant syrup containing a fourth of a grain per ounce of morphine and 1.83 per cent of alcohol is misbranded, firstly, because said contents are not stated on the label, and secondly, it is misbranded because the statement on the label was to the effect that said article could be given in full confidence to infants when in fact said drug could not be so administered by unskilled persons and administered to infants without endangering the health and lives of said infants.

Such rulings on the part of the federal government should be carefully noted by druggists in every state in the Union.

ELIXIR OF IRON, QUININE AND STRYCHNINE.*

Lab. No.	Insp. No.	NAME.	City.	Sp. Gr.	Solid residue from 100 cc.	Alkaloidal content from 100 cc.
5252	9111	P. & F. Drug Co.	Pratt	.....	16.36	0.860
5290	80127	Bunker & Frets	Arkansas City	1.089	5.255	0.790
5285	80132	W. A. Farringer	Winfield	1.087	27.40	0.814
5304	80147	H. E. Leach & Son.	Alton	1.105	40.30	0.442
5305	80148	G. R. Thomason	Stockton	1.166	10.19	0.764

* Elixir of iron, quinine and strychnine should contain 21.653 grams total solids, 0.896 to 0.9025 grams of total alkaloids in 100 cc., and should have sp. gr. of about 1.0876.

HYDROGEN PEROXIDE.*

Lab. No.	Insp. No.	NAME.	City.	Per cent H ₂ O ₂ .	Ca.N/10 H ₂ SO ₄ to neutralize.	Residue.	Manufacturer.
5307	80150	H. L. Irwin	Anthony	3.10	1.40	0.01047	P. D. & Co.
5308	80151	F. Olstead	Anthony	3.08	2.00	0.0189	Mal't
5309	80152	Dr. Kirkpatrick	Anthony	2.97	2.00	0.0168	F. & G.
5310	80153	C. K. Croker	Anthony	3.02	2.00	0.0185	Sow. Drug Co.
5311	80154	Earl Collins	Harper	3.15	2.20	0.0168	F. & G.
5312	80155	H. G. Collins	Wellington	3.10	2.20	0.0191	E. S. Drug Co.
5313	80156	Harper Drug Co.	Harper	3.18	2.10	0.0185	F. & G.
5314	80157	M. D. Perry	Caldwell	3.20	1.90	0.0268	Van N. Drug Co.
5315	80158	Dr. Gabbert	Caldwell	3.05	1.80	0.0194	McP. Drug Co.
5317	80159	Emerson & Harrison	Wellington	3.17	2.00	0.0190	E. S. Drug Co.
5318	80160	Gallop & Crow	Wellington	3.10	2.00	0.0188	McP. Drug Co.
5326	80170	D. Hogsbaum	Pittsburg	3.10	2.50	0.0263	E. S. Drug Co.
5327	80171	Lowman Bros	Pittsburg	3.15	2.45	0.0182	McP. Drug Co.
5328	80172	Pittsburg Drug Co.	Pittsburg	3.08	2.35	0.0125	P. D. & Co.
5336	80182	C. C. Moore	Galena	3.70	1.40	0.0159	Arthur Chem. Co.
5339	80182	L. J. Haines	Galena	3.71	3.25	0.0073	Oakland Chem. Co.
(Dioxogen.)							
5346	80189	Pritchard & Blatchley	Fort Scott	3.35	2.04	0.0269	Squibb & Son.
5355	80196	Tom Mason	Fulton	2.71	2.48	0.0180	McP. Drug Co.
5356	80199	Tom Mason	Fulton	2.78	2.55	0.0181	Am. Drug Synd.
5369	80206	Mrs. O. Ward	Stark	0.813	4.83	0.0083	Larkin Co.

* Solution of hydrogen dioxide should contain about 3 per cent weight of absolute hydrogen dioxide. Total solids from 20 cc. of this solution should not exceed 0.03 gram. The acidity, when determined by the official method, using 25 cc. of the solution and 5 cc. of N/10 potassium hydroxide solution, should not require less than 2.5 cc. of N/10 sulphuric solution to neutralize. Heavy metals, none.

FLUID EXTRACT OF GELSEMIUM.

Lab. No.	Insp. No.	NAME.	City.	Total alkaloids.	Manufacturer.
5428	20048	Leverich Drug Co.....	Kansas City.....	0.338	Mulford.
5429	20051	Haasig Bros.....	Kansas City.....	0.469	
5432	20054	Viaduct Pharm.....	Kansas City.....	0.274	S. & D.
5435	20057	G. Q. Lake.....	Kansas City.....	0.426	P. D. & Co.
5440	20062	Flag Pharm.....	Kansas City.....	0.355	A. D. S. assayed.
5443	20065	Whimster's Store.....	Kansas City.....	0.329	Mulford.

TINCTURE OF IODINE.*

Lab. No.	Insp. No.	NAME.	City.	Grams KI in 100 cc.	Grams iodine in 100 cc.
5350	80198	Star Drug Co.....	Fort Scott.....	1.922	4.905
5354	80196	J. E. Rader.....	Fulton.....	5.016	7.080
5380	20004	A. & A. Drug Co.....	Great Bend.....	5.238	6.1128
5383	20007	Farnsworth Drug Co.....	Hoisington.....	6.156	6.428

* Tincture of iodine should contain at least 6.86 grams of iodine and 5 grams of potassium iodide in 100 cc of the tincture.

BLUE OINTMENT.*

Lab. No.	Insp. No.	NAME.	City.	Per cent mercury.	Manufacturer.
5431	20053	Lee Vaughan.....	Kansas City.....	33.36	P. D. & Co.
5433	20055	Harrison Drug Co.....	Kansas City.....	32.07	Mulford.
5437	20059	J. Paradowsky.....	Kansas City.....	32.43	Mulford.

* Blue ointment should contain about 33.50 per cent of mercury.

SPIRIT OF CAMPHOR.*

Lab. No.	Insp. No.	NAME.	City.	Grams camphor in 100 cc.	Manufacturer.
5385	80179	Martin Drug Co.....	Scammon.....	6.78	
5340	80184	E. R. Wheeler.....	Galena.....	9.32	
5343	80187	R. E. Bertholf.....	Cherokee.....	9.30	
5347	80190	C. S. Pratt.....	Fort Scott.....	8.97	
5357	80200	W. H. Broadwell.....	La Cygne.....	9.17	
5363	80003	U. P. Pharmacy.....	Topeka.....	8.61	Arnold Drug Co.
5376	80213	Mrs. O. Ward.....	Stark.....	10.87	Larkin Comp'ny.
5390	20014	Seitz's Eagle Drug Store...	Salina.....	11.66	
5391	20015	Eksstrand Drug Co.....	Salina.....	9.75	
5412	20020	Bixby & Lindsey.....	McPherson.....	11.30	

* Spirit of camphor should contain 10 grams of camphor in each 100 cc. of the spirit.

TINCTURE OF GINGER.*

Lab. No.	Insp. No.	NAME.	City.	Per cent alcohol.
5149	9020	U P. Pharmacy.....	Topeka.....	90.00
5150	9021	Campbell Drug Co.....	Topeka.....	90.50
5159	9081	F. O. Drug Store.....	Topeka.....	90.50
5160	9082	H. W. Wilson.....	Topeka.....	87.50
5162	9084	Lake's Pharmacy.....	Topeka.....	89.00
5179	9043	Hammond Drug Co.....	Arlington.....	89.00
5183	9035	Rosser Bros.....	Topeka.....	90.50
5802	80140	R. H. Trusdie.....	Kirwin.....	90.22
5831	80175	T. L. Bennett.....	Weir.....	88.27
5844	80158	Sandidge & Braymen.....	Mulberry.....	90.15
5849	80192	Frank Shoemaker.....	Fort Scott.....	91.88
5860	20000	Alex. Gibler.....	Topeka.....	91.06
5864	80201	Mrs. O. Ward.....	Stark.....	90.28

* Tincture of ginger should contain about 91.0 per cent of alcohol.

ESSENCE OF PEPPERMINT.*

Lab. No.	Insp. No.	NAME.	City.	Cc. oil in 100 cc. of essence.	Added water.
5222	9085	H. B. Allen.....	Wichita.....	8.78	2.94
5900	80148	Baldwin & Co.....	Osborne.....	10.00	None.
5937	80151	Bartlett.....	Columbus.....	9.90	None.
5851	80194	E. B. Fletcher.....	Fort Scott.....	9.40	None.
5971	80206	Mrs. O. Ward.....	Stark.....	9.99	None.
5414	20022	Bert Moore Drug Co.....	Inman.....	5.06	16.00

* Essence of peppermint should contain 10 cc. of oil in 100 cc. of the preparation and no added water.

ELIXIR OF LACTATED PEPSIN.*

Lab. No.	Insp. No.	NAME.	City.	Cc. undigested albumen.	Acidity.	Presence of saccharin.
5245	9104	Hubbard Drug Store.....	Liberal.....	25.0	.....	.....
5274	80121	P. H. Lindley.....	Havana.....	25.0	.....	Present.
5275	80122	Elgin Drug Co.....	Elgin.....	25.0	.....	.....
5276	80128	Leonard Drug Co.....	Cedar Vale.....	16.0	.....	.....
5277	80124	Myers & Maurer.....	Dexter.....	7.0	.....	Present.
5281	80123	E. C. Dye.....	Arkansas City.....	7.0	.....	Present.
5282	80129	J. N. Harter.....	Winfield.....	7.0	.....	Present.
5291	80134	Carlin-Supple Pharmacy.....	Solomon.....	27.0	.....	.....
5294	80137	J. Heberly & Co.....	Minneapolis.....	2.5	.....	.....
5295	80138	Nester Drug Co.....	Minneapolis.....	7.0	.....	Present.
5298	80141	B. H. Hockett.....	Cawker City.....	24.5	.....	.....

ESSENCE OF PEPSIN.*

Lab. No.	Insp. No.	NAME.	City.	Cc. undigested albumen.	Acidity.
5279	80128	W. N. Harris.....	Arkansas City.....	4.0	3.0
5286	80133	R. B. Bird.....	Winfield.....	1.0	2.5
5293	80136	Palace Drug Store.....	Minneapolis.....	None.	3.3

* Elixir of lactated pepsin and essence of pepsin, when assayed by the official method, should show not more than 1 cc. of undigested albumen.

TINCTURE OF OPIUM.*

Lab. No.	Insp. No.	NAME.	City.	Grams morphine in 100 cc.
5343	80186	Campbell Drug Store.....	Galena.....	1.014
5381	20095	C. E. Holmes.....	Great Bend.....	1.280
5398	20017	J. J. Purcell.....	Salina.....	1.140

* Tincture of opium should contain 1.2 to 1.25 grams of morphine in 100 cc. of the tincture.

SEIDLITZ POWDERS.*

Lab. No.	Insp. No.	NAME.	City.	Average weight NaHCO ₃ and NaKC ₄ H ₄ O ₆ .	Average weight H ₂ C ₄ H ₄ O ₆ .	Per cent H ₂ C ₄ H ₄ O ₆ .
5306	80146	C. D. Smith Co.....	St. Joseph, Mo...	10.6	2.18	99.9
5306	80149	United Drug Co ...	Boston, Mass...	10.2	2.40	99.6
5373	80210	.....	.....	11.2	2.80	99.9

* The weight of sodium bicarbonate and potassium and sodium tartrate should be 10.8 grams in each powder. The weight of tartaric acid should be 2.25 grams.

FOWLER'S SOLUTION.*

La. No.	Insp. No.	NAME.	City.	Per cent arsenic trioxide.
5269	80116	E. I. Fhb.....	Sedan.....	0.956
5270	80117	R. E. Rathbun Co.....	Sedan.....	0.955

* Fowler's solution should contain 1-per cent of arsenic trioxide.

ALCOHOL.*

Lab. No.	Insp. No.	NAME.	City.	Specific gravity.	Impurities.
5244	9108	Chas. Taylor & Co.....	Liberal.....	0.8085	None.
5248	80131	Plagmann & Dome.....	Winfield.....	0.8080	None.

* Alcohol should have a specific gravity of 0.809 at 25° C., and should be free from impurities.

Lab. No. 5268A. "Cream of Tartar." Sample contained 99 per cent potassium bitartrate, a trace of alumina, sulphates, phosphates and iron.

Lab. No. 5268B. "Cream of Tartar." Sample contained 99 per cent potassium bitartrate. Sample contained traces of sulphates, phosphates and alumina.

Lab. No. 5273, Insp. No. 80120. "Lime Water." Corner Drug Store, Caney, Kan. 50 cc. of the sample required 22.9 cc. N/10 sulphuric acid to neutralize. The U. S. P. requires not less than 19 cc. N/10 sulphuric acid. No other alkali present. Passed.

Lab. No. 5290A, Insp. 7991. "King's Soluble Essence of Jamaica Ginger." King Manufacturing Company, Topeka. Kan.

Sample contained 26 per cent alcohol. Preparation was evidently made according to the formula in the National Formulary for soluble essence of Jamaica ginger.

Lab. No. 5212, Insp. No. 9074. "Soft Soap Liniment." J. R. Roy, Wichita, Kan. Specific gravity, 0.9612. Total solids, 33.18. Passed.

Lab. No. 5361, Insp. No. 20,001. "Glycerin." C. M. Knowlton, Topeka, Kan. Specific gravity, 1.246. Aqueous solution neutral to litmus. No sulphates, oxalic acid, calcium, chlorides nor acrolein present.

Lab. No. 5362, Insp. No. 20,002. "Tr. of Capsicum." J. W. Brown, Topeka. Contained 90.33 per cent alcohol.

Lab. No. 5366, Insp. No. 80,203. "Powdered Boric Acid." Larkin Company, Buffalo, N. Y. Contained 99.8 per cent boric acid. No sulphates, chlorides or heavy metals detected.

Lab. No. 5375, Insp. No. 80,212. "Spirit of Anise." Mrs. O. Ward, Stark, retailer. Larkin & Co., Buffalo, N. Y., manufacturer. Contained 10.2 per cent oil of anise. Passed.

Lab. No. 5268C, Insp. No. 19X. "Syrup, Strawberry Flavor." Frank H. Fay, Hoxie, Kan. Purchased from the Los Angeles Phosphate Company, St. Louis, Mo. Syrup contained tartaric acid and was colored with coal tar dye.

Lab. No. 5345, Insp. No. —. "Buckwheat Flour, Wishbone Brand." A. C. Hess, retailer, Reno, Kan. Examined microscopically and found to contain no foreign substance.

Lab. No. 5386, Insp. No. 20,010. "Dr. Tyler's Headache Powder." The powders were put up in a pasteboard box which is enclosed in an original wrapper. No statement of the presence of acetanilid appears anywhere on this wrapper, which has upon it the label and other printed matter. On the box the statement is made that each powder contains four grains of acetanilid with other reliable ingredients. On the wrapper the following statement is made in large type: "These headache powders contain neither morphine, chloral nor antipyrin." They were found to contain acetanilid and sodium bicarbonate.

Lab. No. 5389, Insp. No. 20,013. "Richard III Headache Tablets." Manufactured by Boesenroth-Obermann Medicine Company, Chicago, Ill. Contained sodium bicarbonate, acetanilid. Declared by manufacturer to be perfectly harmless and to be a sure cure for all kinds of headache and neuralgia. Misbranded.

Lab. No. 5449, Insp. No. 12D. "A. D. S. Cold Tablets." American Druggists Syndicate. The tablets contain acetanilid, capsic-

cum, cinchonidine, a trace of quinine, calcium carbonate and menthol.

Lab. No. 5461, Insp. No. ———. "Nicine." Disinfectant. Found to contain an impure chalk, and crude cresol. Manufactured by the Hood Chemical Company, Chicago.

Lab. No. 5462, Insp. No. ———. "Freezine." B. Heller & Company, Chicago, Ill. For disinfecting milk cans. Directions: Wash bottles and cans in hot water and then make a solution using two tablespoonfuls of Freezine to one-half gallon of water. With this solution rinse bottles and cans thoroughly. Freezine was found to contain 4.92 per cent formaldehyde. Freezine sells at \$1 per quart bottle, or \$3.50 per gallon. Retail price of 40 per cent solution of formaldehyde, 75 cents per quart bottle.

Lab. No. 5320A, Insp. No. 23X. "Ice Cream Powder." Sample was found to contain powdered sugar and cornstarch.

Lab. No. 5090, Insp. No. 2958. "Royal Camphorated Cream." Knox Five and Ten Cent Store. Manufacturer, Gerarde Perfume Company, Chicago, Ill. Sample contained petrolatum, paraffin, small amount of camphor.

Lab. No. 5166, Insp. No. ——. "Tablets." Chocolate coated tablets weighing 5.7 grains each. Each tablet was found to contain 3.9 grains of quinine sulphate.

Lab. No. 5287, Insp. No. ——. "Pills." Weight of sample 0.600 grams. Weight of morphine, 0.024. Morphine in sample, 4 per cent. Meconic acid was present. Official opium po. in sample calculated from per cent of morphine, $33\frac{1}{2}$ per cent or about $\frac{1}{2}$ grain in each pill.

Lab. No. 5484, Insp. No. 6655. "McLaughlin's Arabian Mocha and Java Coffee." Sample contains about three parts washed Java and one part Mocha.

During the seven weeks it took to make a study of social and industrial conditions that prevail in their relation to tuberculosis, in a city of 80,000 population, twenty-four people of that city died of the disease. Is the disease epidemic?

LINSEED OIL.

Ten samples of linseed oil, sent in by the inspectors, were examined during the past month. The samples showed a specific gravity ranging from 0.889 to 0.934. All samples were much darker than the standard, 5407 being very dark. The latter sample was decidedly fluorescent, due to added rosin oil. No. 5448, besides being darker than pure oil, showed the characteristic bloom of its principal adulterant, mineral oil. A wide variation was noted by other tests. Saponification number, 105.2-193.6; iodine value, 162.7-176.6; flash test, 150°-305°; fire test, 65°-360°; drying test, 24-84 hours, with some samples apparently not drying at all. The greatest uniformity appears to be in the price, \$1 to \$1.15 per gallon. The sample No. 5398, selling at \$1.15, had constants much below normal; would not dry properly, the skin forming on glass plate being opaque and very easily rubbed off. The oil was absolutely worthless for any purpose for which linseed oil is used. Samples 5396, 5398, 5407, 5409 and 5418, comprising 40 per cent of all samples tested, were grossly adulterated, while all were in one or more respects below standard.

Seven samples of "boiled oil" were examined. While the range of variation for raw oil should be within rather narrow limits, we would expect a somewhat wider range for boiled oil. The variation was found to be even much greater than would seem to be necessary. The specific gravity ranged from 0.886 to 0.936; saponification value, 90.51 to 192.3; with a corresponding variation in iodine number, flash test, fire test and time for drying. With two exceptions the boiled oils dried within twenty-four hours. Sample 5418 required forty-eight hours and would not form a hard coat on glass plate. The coat was opaque, soft and easily rubbed off. This sample had a dirty brown color; saponification value, 105.9; iodine value, 90.0; specific gravity, 0.892. The oil was worthless as a paint oil. The average retail price for boiled oil was \$1 per gallon.

LINSEED OIL.

Lab. No.	Insp. No.	Specific gravity.	Color.	Sapon. value.	Iodine value.	Flash test.	Fire test.	Time required for drying.	Liebermann reaction for rosin and resin oil.	Ref. I.	Price per gallon.	Remarks.
STANDARD												
5384	20085	0.980	Yellowish.	185.0	270°	350°	72 hours.	-	-	1.4880	.....	Completely saponifiable.
5385	20086	.983	Darker than normal.	183.6	300°	360°	72 hours.	-	-	1.4917	.....	Substandard in color.
5386	20087	.985	" "	183.6	300°	365°	72 hours.	-	-	1.4923	\$1 00	Substandard in color.
5386	20088	.982	" "	183.6	66°	66°	24 hours.	-	-	1.4888	1 10	Adulterated, contains turpentine.
5388	20086	.889	" "	105.2	180°	200°	Does not dry	-	-	1.4766	1 15	Adulterated, contains mineral oil.
5389	20087	.931	" "	191.88	305°	355°	84 hours.	-	-	1.4887	.....	Substandard in color.
5406	20044	.983	" "	182.8	288°	345°	24 hours.	-	-	1.4884	.....	Not completely saponifiable.
5407	80222	.984	Very dark	187.7	180°	250°	24 hours.	+	+	1.4827	.....	Adulterated.
5446	827	.987	Bloom	105.9	.....	350°	Does not dry	-	-	1.4767	.....	Adulterated.
5390	823	.983	" "	188.04	300°	350°	.....	-	-	1.4767	.....	Adulterated.
5321	8 D	.910	" "	169.8	200°	235°	.....	-	-	1.4782	.....	Adulterated.
5319	.....	.887	" "	98.6	180°	100°	.....	-	-	.....	.....	Adulterated.

BOILED LINSEED OIL.

5397	20085	.985	Dark.	184.9	180°	320°	24 hours.	+	1.4843	.....	.....	.....
5408	20041	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5404	20042	.980	.....	192.8	280°	350°	24 hours.	-	1.4828	.....	\$1 00	.....
5406	80218	.896	.....	182.3	275°	345°	24 hours.	-	1.4828	.....	1 00	.....
5363	909	.....	.....	90.57	60°	60°	24 hours.	-	1.4789	.....	.....	.....
5418	20027	.928	.....	161.8	.....	.....	.....	.....	1.4767	.....	.....	.....
5420	822	.....	.....	186.72	300°	345°	48 hours.	+	1.4829	.....	.....	.....
5421	20080	.984	Very dark.	105.9	90.0	190°	Does not dry	+	1.4772	.....	.....	.....
5320	9 D	.914	.....	188.1	182.7	.....	24 hours.	+	1.4843	.....	.....	.....
5384	4 D	.888	.....	160	95°	.....	Does not dry	+	.....	.....	.....	.....
5285	5 D	.933	.....	96.7	108°	.....	Does not dry	+	.....	.....	.....	.....

* The pharmacopoeial requirements for linseed oil are that it have a specific gravity of 0.985 to 0.989; saponification value of 187 to 196; iodine value, not less than 170; that it have a yellowish color, and should dry on glass plate, forming hard, transparent coat.

SPECIAL RERORT ON LINSEED OIL.

Chapter 179, Session Laws of 1911.

AN ACT to prevent the adulteration of turpentine, linseed oil or flaxseed oil, prevent deception in the sale thereof, and to provide for the punishment of such adulteration and deception.

Be it enacted by the Legislature of the State of Kansas:

SECTION 1. Hereafter it shall be unlawful to manufacture, mix for sale, sell, offer or expose for sale in this state, under the name of raw linseed oil or flaxseed oil, any substance which is not wholly the product obtained from well-cleaned flaxseed or linseed, and unless the same fulfills the latest requirements of the United States Pharmacopoeia, or any so-called boiled linseed oil, or boiled flaxseed oil, unless the same shall have been prepared by incorporating drier with raw linseed oil, as defined above, at a temperature of not less than 225 degrees Fahrenheit, and unless the same contains not less than 96 per cent of linseed oil. And for the purpose of this act it shall also be deemed a violation thereof if boiled linseed oil does not conform to the following requirements: (1) Its specific gravity at 60 degrees Fahrenheit must not be less than 0.935. (2) Its saponification value (Koettstorfer figure) must not be less than 126. (3) Its iodine number (Huebl's method) must not be less than 160. (4) Its acid value must not exceed 10. (5) The volatile matter expelled at 212 degrees Fahrenheit must not exceed one-half of one per cent. (6) No mineral oil shall be present, and the amount of unsaponifiable matter as determined by standard methods shall not exceed 2.5 per cent. (7) The film left after flowing the oil over glass and allowing it to drain in a vertical position must dry free from tackiness in not to exceed twenty hours, at a temperature of about 70 degrees Fahrenheit. It shall be unlawful to manufacture, mix for sale, sell, offer for sale or expose for sale in this state under the name of turpentine or any compound of the word turpentine or under any name or device illustrating or suggesting turpentine, oil of turpentine or spirits of turpentine, any article which is not wholly distilled from rosin, turpentine gum, or scrape from pine trees, and unmixed and unadulterated with oil, benzine or any other foreign substance of any kind whatsoever.

SEC. 2. No person, firm or corporation shall sell or offer for sale any turpentine, flaxseed oil or linseed oil, unless it is done under its true name, and each barrel, keg or can of such oil so sold, exposed or offered for sale, has distinctly and durably painted, stamped, stenciled, labeled or marked thereon the true name of such oil in ordinary bold-faced capital letters, not less than five lines pica in size, and the name and address of the manufacturer thereof, or that of the jobber or dealer therein; provided, that if the contents of the package be less than twenty-five gallons, a label may be used printed in type not less than two-line pica in size.

SEC. 3. Any person, firm or corporation who shall fail to comply with the requirements of section 2 of this act, or falsely paint, stencil, label or mark, as required by section 2, said barrels, kegs or cans containing turpentine, flaxseed oil or linseed oil, or knowingly permit such false painting, stamping, labeling or marking, or violate any of the provisions of this act shall be deemed guilty of a misdemeanor, and upon conviction punished with a fine of not less than ten dollars nor more than one hundred dollars or

imprisonment not less than ten days nor more than ninety days or both for each offense.

SEC. 4. Nothing in this act shall be construed as prohibiting the manufacture or sale of adulterated spirits of turpentine or linseed oil compounds; provided, if such compounds or adulterations are designed to take the place of raw or boiled linseed oil or turpentine as defined in section 1 of this act, they shall not be manufactured or mixed for sale, sold, offered or exposed for sale under any title or designation conveying the impression, either directly or indirectly, that it is flaxseed oil or linseed oil, and all compounds of linseed oil or flaxseed oil shall, when sold, offered or exposed for sale, under invented proprietary names or titles, bear conspicuously upon the containing vessel in capital letters, not less than five-line pica in size, the word "compound," or "adulterated," and be labeled so as to state clearly and distinctly the actual proportions of turpentine or linseed oil and other ingredients contained therein, said label to be printed in the English language, in plain legible type in continuous list, with no intervening matter of any kind.

SEC. 5. The chief food and drug inspector, as well as his inspectors, assistants, experts, analysts, or others appointed by him, shall have full rights of ingress and egress to the premises occupied by parties who manufacture, deal in or compound turpentine, linseed oil or flaxseed oil, and also shall have power and authority to open any tank, barrel, can or other vessel believed to contain such oil, turpentine, or products used in its manufacture, and to inspect the contents thereof, and to take therefrom samples for analysis, and in case any of these samples so taken shall prove on analysis to be adulterated in violation of the provisions of this act, it shall be the duty of the person securing the sample to proceed against the offender as herein provided.

SEC. 6. This act shall take effect upon its publication in the statute book.

Approved March 7, 1911.

Boiled oil, M. A. Hulburt & Co., Cleveland and Omaha; sample from Glenn Hardware Company, Minneapolis, Kan. Specific gravity, 0.9140. Saponification value, 150. Flash test, 95° C. Oil forms, heavy. Gelatinous coat on glass and not the hard transparent resin characteristic of the pure linseed oil. Sample gives test for resin oil and contains about 20 per cent unsaponifiable matter; largely mineral oil.

Linseed oil, M. A. Hulburt & Co., Cleveland and Omaha; sample from Hartford, Kan. Oil has characteristic odor and bloom of mineral oil. Sample has refractive index of 1.4776. Saponification value, 100.90, and responds to Lieberman Stroch test for resin and resin oil. Adulterated.

Raw linseed oil, M. A. Hulburt & Co., Omaha; sample from Salina Paint and Paper Company, Salina, Kan. Specific gravity, 0.922. Saponification value, 188.04. Flash point, 300° C. Fire

test, 360° C. Sample does not form hard transparent resin on glass plate. Adulterated.

Raw linseed oil, American Linseed Oil Company, Cleveland and Omaha; sample from Otto Wolgast, Alta Vista, Kan. Saponification value, 188.6. Iodine number, 148.6. Does not form a perfect skin on glass plate, easily rubbed off; turbid; below standard.

Raw linseed oil, American Linseed Oil Company; sample from Fredonia Linseed Oil Company, Fredonia, Kan. Specific gravity, 0.8892. Flash test, 150° C. Fire test, 190° C. Saponification value, 105.9. Characteristic bloom of mineral oil. Does not dry properly on glass plate. Adulterated.

Raw linseed oil, Great Western Oil and Paint Company, Cleveland. Brand on barrel, Duluth and Superior Linseed Works; sample from Gem drug store, Ellinwood, Kan. Saponification value, 152.7. Specific gravity, 0.905. Fire test, 225° C. Flash test, 200° C. Does not dry on glass plate. Adulterated with mineral oil.

In order to show the methods used by some companies in doing business, the following letter written a firm in Wichita, and extracts from a letter written another dealer, after these parties had refused to accept shipments of oil on account of their being adulterated, are here given:

"———, Wichita, Kan.:

"———, March 19, 1912.

"GENTLEMEN: Please find enclosed a New York draft and voucher for \$48.90. This is for freight, drayage, and storage which you claim you paid on the five barrels of oil which you have on hand. Kindly return this oil to our company at Omaha, Neb. Please send the bill of lading to Cleveland, Ohio.

We are, yours very truly,

"(Signed)———"

"P. S. Kindly attach freight and storage receipt to our voucher and return promptly."

There is on file with this department additional information showing several similar cases where dealers have refused to pay for or handle these oils which were sold them as pure, but which analysis showed to be adulterated, and the company squaring these several accounts by paying all costs and having the oil returned. They know it is not pure oil, and when caught are evidently glad to get out of it as quickly and easily as possible.

REPRESENTATIONS MADE FOR AN ADULTERATED OIL.

"This is one of the best oils on the market, and some of our customers have been using it right along for the most particular kind of work."

"We firmly believe that after you have given the oil a thorough trial you will not want to return it."

"You will find it as good as any oil you have ever used."

"If you will go ahead and use the oil you will find it satisfactory in every respect."

"It will compare very favorably with any oil any painter has ever used."

"It will give you as good satisfaction as any oil you have ever used."

Dealers should not be misled by such statements and claims as these, made by the sellers of impure oils.

The law requires you to handle pure oil, or sell compounds or adulterated articles for exactly what they are, and be properly labeled. Are you protecting yourself in this matter? Do you know the oil you are buying? Have you taken into consideration the price, comparing it to what you know to be the average market price? Have you inquired into the reliability of the firm with which you are dealing? It is not necessary for you to buy blindly.

Raw linseed oil must comply with the requirements of the United States Pharmacopœia; it is a recognized medicinal product, should be bought as such, and so specified in your contract.

This information is given for your future guidance in the handling of linseed oil (raw and boiled) and turpentine. You are responsible under the law for those products as you sell them, and notice is herewith given that from and after this date it will be necessary for this department to strictly enforce this law and take immediate action against all violators.

The Prevention of Typhoid Fever by Inoculation with Dead Bacteria.

By T. HARRIS BOUGHTON, M. D., Professor of Bacteriology, and Pathology, University of Kansas School of Medicine.

One of the most important discoveries of recent years is the fact that typhoid fever can be almost entirely prevented by inoculating persons with dead typhoid bacteria. This has been most prominently shown in military camps, especially in this country, where during the last four years the typhoid rate has been only one-sixth as great among the inoculated as among the uninoculated men, and the death-rate from typhoid has been only one-fifteenth as great. This method has been used in the armies of the world for about fourteen years with similar results, but the results have been better in this country than elsewhere.

The theory upon which this method of treatment is based is simple. The reason that a person recovers from an attack of typhoid fever or any other infectious fever is that the body is able to produce protective substances or antitoxins that neutralize the poisons produced by the bacteria. After an attack he remains immune for a time, and this immunity is due to the fact that these protective substances are present in the blood in considerable amount, as can be demonstrated by laboratory methods. Now if some method can be found to cause the body to produce the immune substances without an actual attack of fever, the person can obtain the same degree of immunity that he could by having an attack of the disease. Less than one per cent of all persons who have had typhoid ever get it the second time; that is, the immunity lasts for life. The immunity produced by the inoculation probably does not last so long. It probably lasts at least two years, but possibly much longer.

My own observations comprise 120 cases (at the University) in which a total of 381 injections were given, and the results carefully noted. In almost all cases there is a reaction of some sort following the inoculation, but this is much less severe than a smallpox vaccination. Usually it appears as a slight soreness, redness and swelling at the site of the inoculation (usually the arm). This begins to appear within a few hours and usually lasts about eighteen to twenty-four hours. Occasionally there is a little pain and stiffness for twenty-four hours, but practically never severe enough to interfere with the free use of the arm, and it is always of short duration. In addition to this local reaction there may be a constitutional disturbance, in about one-fifth of the cases, which is described as feeling "like a bad cold," or as making the person feel "a little lazy." There may be a slight feeling of malaise or tiredness, often with a slight headache, and rarely a little nausea, or slight rise in temperature, or chilly sensations. This will never last longer than twelve to twenty-four hours, and will never prevent a person from continuing with his regular work.

In my own cases the size of the doses and the intervals between them were varied considerably, according to individual cases. In the army the usual method is to give three doses at intervals of ten days. The first dose is 500 million bacteria, and the later doses are of 1000 million each. I believe that it is better to begin with smaller doses, and use more of them if necessary. As a routine I believe the initial dose should be 250 million bacteria. Each of the subsequent doses may be double the preceding dose. Thus

three doses would be given, the last being 1000 million. The interval should be ten to fourteen days. In case a reaction of any severity develops, the interval may be lengthened, and the dose may be increased more slowly, so that four or more would be given before the maximum of 1000 million was reached. The treatment may be given to women and children by reducing the maximum dose according to body weight, taking the standard as 150 pounds. In the army men over forty-five years of age are exempt from the inoculation, as persons of that age almost never take the disease.

In nearly all cases there was some local reaction following the first dose, but in half the cases this was quite mild, and if the first dose is not larger than 250 million it will probably never be severe. The severity of the reaction tends to be less for the later doses, although they are larger. It seems safe to say that when a person shows a rather severe reaction, it probably means that he is more than usually susceptible to the infection, and would be more liable to take the disease, and therefore needs the inoculation. The systemic reaction is much less common than the local, and is more apt to occur on the second dose than any of the others. In my experience it has been rare on the later doses. It will always disappear in twenty-four to thirty-six hours, and usually does not last longer than twelve hours.

In order to get the best results, however, certain precautions should be observed. The injection should be given subcutaneously, and not intramuscularly, as in the latter case it may cause some stiffness of the muscles. It should be given when the person is in good health, because if given in the presence of a bad cold, sore throat, tonsilitis, diarrhoea, or other infectious illness, the injection may make the condition somewhat worse for a day or so. The person should be cautioned to avoid alcohol, and hard work or severe exercise for twenty-four hours following the injection, although there would be no danger in these things, but they would have a tendency to make the reaction more severe.

Vaccines have also been used in the treatment of actual cases of typhoid fever, but the number of such cases on record is too small to justify any conclusions, although some men have reported good results from such treatment. Theoretically, this method is rational.

CONCLUSIONS.

There is no question that inoculation prevents typhoid fever in a large number of cases, and if typhoid does occur, the previous inoculation will make the case much milder than it would otherwise be.

The initial dose should be 250 million; the later doses may be doubled each time. If the reaction is troublesome the dose may be increased more slowly (50 per cent each time). The maximum dose should be 1000 million for men, and proportionately less for women and children, on a basis of body weight. Ordinarily the interval between doses should be ten to fourteen days, or longer if the reaction is troublesome.

A local reaction is to be expected after the first dose, but this usually becomes less after the later doses, and will practically never be troublesome if the above method of administration is used. A constitutional reaction occurs in about one-fifth of the cases, but is of brief duration and is not severe enough to interfere with ordinary work.

The injection should be given under strict aseptic conditions, about 4:00 P. M., subcutaneously, into the arm, and should not be given in the presence of any infectious illness. The person should avoid alcohol and hard work for the next twenty-four hours.

The duration of immunity is uncertain. It is probably from one to two years, but possibly much longer. The Widal agglutination test is usually positive for six to twelve months after an inoculation, and this should be remembered if typhoid is subsequently suspected.

The value of this treatment in actual cases of typhoid is not established, though the method is rational.

I should be glad to correspond with physicians of the state in regard to their experiences with this method of inoculation.

Paralysis in an Experimental Monkey.

A. L. SKOOG, M. D., Associate Professor of Neurology, University of Kansas Medical School; Special Investigator to the Kansas State Board of Health; Neurologist to Bell Memorial, St. Margaret's and Swedish Hospitals.

This report deals with the pathological phase of some experimental work performed by Prof. S. J. Hunter, of the University of Kansas, to establish a possible relationship of the *Simulium vittatum*, or sand-fly, in the etiology of pellagra.

I quote a few selected pertinent lines from Professor Hunter's article in the Journal of the American Medical Association, February 24, 1912, vol. LVIII, page 547, which reports the work done during the past season: "Ten guinea-pigs and two monkeys were used and the temperatures of all were taken morning and evening daily. The number of live flies exposed to the pellagrins and then to the guinea-pigs was 499; the number of live flies exposed to the

pellagrin and then to the monkeys was 197. Earlier in the season the flies did not seem to bite the patient, but beginning with October 12 they attacked her, biting freely, drawing blood perceptibly from the pellagrin's arm. These flies were then divided, part placed in a fly-proof cage with the male monkey; part with the guinea-pigs. Repetitions of the same experiments were made almost daily during the stated period.

On November 3, 1911, the two monkeys were removed from the scene of the field work to Lawrence, where observations were conducted at the University. Prior to November 6 both monkeys were enjoying good health. The female has continued in good health to this date.

The male monkey began to show signs of illness on November 6. It was noted that he was not as lively as usual. On the morning of November 7 he appeared quite ill and remained in the bottom of the cage. Prostration rapidly increased, and in the evening he remained stretched out with flaccid muscles. He had a temperature of 103.6 F. at 9:30 P. M. and a respiration rate of 60. He was left for the night, expected to be dead by morning. November 8 he was much improved, but still sick. Temperature 101.6 F. November 9, unable to climb. Lower extremities especially were paralyzed. No food taken since November 5. On the evening of November 10 I first saw and examined the monkey at Lawrence. I brought the animal to the Rosedale laboratory in the evening for further examinations. The monkey still appeared ill. The hair was much ruffled up. The eyes were not as clear as normal. A portion of a banana was eaten. Cerebral functions showed no impairment. Sensation apparently normal. Superficial reflexes were normal. The deep reflexes were diminished in the anterior extremities and absent in the patellar and Achilles tendons. Motor power was diminished in all four extremities, greater in the posterior. In attempting to climb in the cage unusually great efforts were put forth, and the attempt was partly accomplished chiefly by the use of anterior extremities. The monkey seemed to be hypersensitive to pressure along the spine and movements of same. November 11 nourishment was taken. There was not much evidence of acute symptoms. Paralysis remained the same.

The monkey was chloroformed to death at 3 P. M. and autopsied. The thoracic and abdominal organs showed no changes that might cause death, or cause any disturbance of functions. The lungs contained no evidence of tuberculosis. There was evidence of some

hyperplasia of the abdominal mesenteric lymph nodes. The meninges of the brain were normal. There were no indications of inflammatory changes in the brain. Minute anatomy of the cortex was normal. Gross examination of the meninges of the cord revealed no changes. No edema was present. Cross sections of the spinal cord at different levels showed a normal structure. No indications of inflammation. The only exception was in the sacral segments where there was a little more color than elsewhere, suggesting the possibility of a congestion.

Ten segments from different levels of the cords, half taken from the lumbo-sacral region, were fixed and hardened in ethel alcohol, mounted, and microscopical sections made. Sections from each were stained by hematoxylin, picric-fuchsin and Nissl methods for minute studies. The pia and arachnoid showed no edema or infiltration and thus no inflammatory evidences. The blood vessels of the pia as well as those of the white and gray substances of the cord had walls perfectly normal. There was neither a vascular nor perivascular infiltration. No infiltration was observed in the gray or white substance excepting posterior and close to the canalis centralis of one lumbar segment where there was a small group of collected endothelial or adventitial cells. They were not leucocytes. Not finding other similar areas I have not attached much importance to this small group of cells. There were no glia or connective tissue proliferations. Studies of the gray substance revealed no changes in the posterior horn cells. In the anterior horn cells are found significant alterations. The degree of cellular changes was most marked in the lumbar and sacral segments. No segment of the cord escaped having had some motor cell degenerations. Several types of chromatolysis were observed. Only about one-tenth of the motor cells of the lumbar and sacral segments show a normal morphology. Probably a few cells have completely disappeared. In many cells the large Nissl bodies have been entirely destroyed, and in others only in certain areas of the cell, especially may be cited the peripheral and perinuclear tigrolysis. The neuclei in some of the degenerated cells are central in location and in others have been displaced to the periphery. They had disappeared completely in a few cells. Thus we could anticipate some function from most of the involved neurones. There were no changes in the white columns. A few dorsal root ganglia examined gave evidence of some mild degenerative changes.

Material from the spinal cord removed under aseptic precautions was macerated in a normal saline solution and animal inoculations

made, among them a monkey inoculated by the cerebral route. All the inoculations yielded negative results.

I had used the monkey in some experimental work with acute poliomyelitis fourteen months previous to the date of the autopsy. One intraventricular injection was made of material obtained from another monkey which had been killed during an attack of acute poliomyelitis, the result of a successful inoculation with material from an autopsied case of human acute poliomyelitis. The results were negative. During the interim of thirteen months the monkey remained well and had universal active motor functions.

To recapitulate, we have a monkey that had been inoculated with the virus of acute poliomyelitis with negative results thirteen months previous to the pellagra experiments, but had an interval of freedom from any experimental work, disease or paralysis. About twenty-five days after being bitten by sand-flies which had drawn blood from a pellagrin a severe acute illness developed. This acute illness was sudden in its onset, severe, of a few days duration, and in its course developed a flaccid paralysis with diminished or lost deep reflexes most marked in the posterior extremities; all of which corresponds to the course of acute poliomyelitis in the human and monkeys. Autopsy revealed cord anterior horn cell degenerations but no infiltrations with leucocytes. Other organs were free from disease.

CONCLUSIONS.

1. Pellagra can be ruled out in the diagnosis. No authentic case has been placed on record with such an onset, course or autopsy findings.

2. Neuritis hardly can be considered seriously in view of the clinical history and pathological findings.

3. Subacute or chronic poliomyelitis has not such a sudden onset nor acute initial symptoms.

4. Acute poliomyelitis might well be the diagnosis from the clinical symptoms and course. The anterior horn cell changes were like those found in the disease. However, there were none of the vascular infiltrations, and it seemed a little early for so complete a resorption if the leucocytes had been present. The transmission of the disease to other animals was not accomplished, but numerous experiments indicate that for a successful transmission the virus should be removed from the transmitter during the very earliest days of his illness. If it is admitted that the monkey had acute poliomyelitis, it was inoculated most likely from one of two sources: at the time of my experiments thirteen months before the

pellagra work, or at the time of the sand-fly bites. If inoculated by my experiments, the virus must have been carried by the monkey fourteen months without gaining an entrance to the central nervous system. If inoculated at the time of the sand-fly experiments, then we might consider the sand-fly as a carrier of acute poliomyelitis.

5. The result of the work with the monkey is interesting and invites more experiments along the same line. Young, healthy monkeys free from disease and having had performed no previous experiments are preferred.

Baneful Effect of Headache Powders

REPORT TO THE STATE BOARD OF HEALTH BY THE COMMITTEE ON HEADACHE PREPARATIONS.

Your committee in its investigation is convinced that over 75 per cent of the headache powders now sold in the market are composed of acetanilid as one of the active ingredients. To give a more definite idea of proportion we would quote from A. McGill's report, Bulletin 230, Inland Revenue Department, Ottawa, Canada. His findings may be accepted as a fair statement for this country. In 150 samples analyzed he found 118 contained acetanilid (a few had associated with this ingredient phenacetin); 24 samples contained phenacetin, and 8 aspirin. E. F. Ladd, N. D. Special Bulletin, vol. II, No. 4, gives the complete analysis of 24 headache powders and tablets. These contain various proportions of acetanilid, caffeine, sodium bicarbonate and antipyrine, and other organic matter. One has quinine, another charcoal and sulphur as accompanying ingredients.

Much has been written with regard to the habit-producing qualities of acetanilid and its allies. What may be said in this report in this regard would be what has so frequently and repeatedly been said, but we may be permitted to quote Doctor Wiley in his report on this drug:

"Acetanilid is a dangerous drug, perhaps one of the strongest of all the drugs used in headache remedies—so dangerous, in fact, that reputable physicians are growing more and more careful of its use, while many are discarding its use altogether. It is a sedative—that is, it has a quieting effect on the sensory nerves and produces a depressing influence on the spinal cord. It depresses the circulation; it lowers the temperature of the body, and in this way it undoubtedly will effect a relief of headache, without, however, a cure. But the headache is cured temporarily at a fearful cost,

since acetanilid is one of the active heart depressants, and its effect upon a weak heart is such as to warrant its exclusion, while in some cases unconsciousness may be produced and in other cases a general debilitating effect."

Habit-forming drugs are susceptible of classification into at least two groups:

First, Those which by accustomed repetition in administration or use so enslave one by an abnormal appetite that legal guardianship seems necessary against the practice of indulgence.

Second, Those which by frequent repetition or use to relieve bodily pain produce such a profound impression upon the nervous system as to cause the patient to lose control of his natural nervous energy and power, and he becomes mentally and nervously dependent upon the agent. This condition (one form of the drug habit) may not be called an appetite in the sense that an alcoholic, morphine or cocaine habit may be said to be, but the inordinate craving referred to in the first instance.

The Federal government has done valiant service in attacking this form of drug habit, as may be attested by the following notices of judgment received, as follows:

1910.

- No. 191, Mar. 5. "Dr. Parker's Universal Headache Cure."
- No. 208, Mar. 17. "O. K. Headache Cure."
- No. 225, Mar. 19. Misbranding of Headache Tablets.
- No. 258, Apr. 28. Preston's Hed-ake.
- No. 260, Apr. 28. U-RE-KA Headache Powders.
- No. 329, Jun. 4. "Dr. Kohler's Antidote."
- No. 346, Jun. 8. Headache Cure.
- No. 392, Jun. 27. "Telephone Headache Tablets."
- No. 418, Jun. 28. "Falck's One-Minute Headache Cure."
- No. 428, Jun. 28. Misbranding of Headache Powders.
- No. 449, Jun. 28. "Eames' Tonic Headache Wafers."
- No. 465, Aug. 8. "Ramon's Pepsin Headache Cure."
- No. 559, Sep. 6. "Rexall Headache Wafers."
- No. 568, Sep. 9. Misbranding of Headache and Neuralgia Cure.
- No. 569, Sep. 9. Headache Powders.
- No. 573, Oct. 11. Misbranding of Headache Tablets.
- No. 624, Oct. 26. "Failing's Headache Powder."
- No. 630, Nov. 12. Wells' Dime Headache Cure.
- No. 631, Nov. 12. Mrs. Summers' Harmless Headache Remedy.
- No. 633, Nov. 12. Sure Pop Headache Powders.
- No. 643, Nov. 12. Dr. Peters' Headache Powders.
- No. 708, Dec. 22. Misbranding of a Drug Product.

1911.

- No. 820, Apr. 18. "Burwell's Instantaneous Headache Catchets."
No. 908, Jul. 8. "Nyal's Headache Wafers."
No. 919, Jul. 18. "The Infallible Headache Tablet."
No. 931, Jul. 13. "Chandler's Headache Buttons."
No. 941, Jul. 18. "White's Headease."
No. 986, Jul. 20. Misbranding of headache Tablets.
No. 1051, Sep. 27. Misbranding of Gessler's Magic Headache Wafers.
No. 1157, Dec. 5. Misbranding of Headache Powders.

(See Farmer's Bulletin 377, Sep. 28, 1909. Harmfulness of Headache Mixtures.)

The United States Department of Agriculture, Bureau of Chemistry, Bulletin No. 126, has issued an exhaustive report on the harmful effects of acetanilid, antipyrine and phenacetin. This report covers 85 pages, taking up mainly the literature on poisoning by this group of aniline derivatives.

Since the year 1904 there has been a notable increase in the number of cases reported as well as in the number of fatalities. This can be adequately explained by the fact that during recent years the control of acetanilid as a remedial agent has rapidly passed from the hands of the medical profession to those of the laity, owing largely to the advertising efforts of the manufacturers of proprietary medicines; and the increase in the number of cases reported and in the number of fatalities is undoubtedly mainly due to the ill-advised and promiscuous use of acetanilid preparations by the laity for the relief of headache and other minor ills.

The symptoms which appear most frequently in the recorded cases of poisoning by acetanilid is cyanosis. With but very few exceptions it is a constant symptom, the depth of the discoloration ranging from a mere dusky hue of the skin or mucous membrane to a color which is described as "blackish-blue" or even "black." This symptom was observed from the first, and even in Cahn and Hepp's original article, which marked the advent of acetanilid in the world of medicine, cyanosis is casually mentioned as a side effect of the administration of the drug. At that time but little significance was attached to its occurrence. We now know, however, that it is an exceedingly undesirable symptom, inasmuch as it is due to a deterioration in the quality of the blood caused directly by the presence of decomposition products of acetanilid. Accompanying the cyanosis there was observed in most of the cases prostration, which varied in degree from mere depression of the bodily functions to actual collapse.

In addition to these symptoms there were observed in many

instances vertigo, faintness, lividity of the face, a pinched and anxious expression, dyspnoea, excessive restlessness, increased perspiration, coldness of the extremities, rapid and feeble heart action, and, in severe cases, stupor or coma. The occurrence of an eruption on the skin is mentioned in only a very few of the recorded cases. This is also true of disturbances of vision and of the functions of the kidneys.

The habitual use of acetanilid is specifically mentioned in 10.7 per cent of the recorded cases of poisoning. This gives no conclusive information, however, as to the actual extent of the acetanilid habit, inasmuch as only those instances of habitual use are recorded in which the ill effects were probably so severe as to cause the patient to seek the advice of a physician.

The increasing use of proprietary remedies containing acetanilid since the year 1904 is indicated in published reports. Since the use of proprietary medicines containing acetanilid, the percentage of fatalities from this cause has risen from 3.7 per cent, in 1891, to 24.1 per cent, in 1907.

C. W. REYNOLDS.

C. E. COBURN.

L. E. SAYRE.

Vaso-Motor Symptoms of Anteropoliomyelitis.

W. S. LINDSAY, A. M., M. D., Topeka, Kan., Special Investigator for the Kansas State Board of Health.

We have learned within recent years that the pathology of acute poliomyelitis involves the medulla, the pons, the basal ganglia and even the brain cortex, but it has been observed that the most marked lesions are found in the anterior horns of gray matter of the cord. Our later investigations of this disease, including the report of the committee on the New York epidemic in 1907, published in 1910, leave us, so far as the principal seat of the disease is concerned, where in the Deutsche Klinik, in 1863, von Rimecker and von Reoklinghausen pronounced the ganglion cells of the anterior gray horns and the nerve fibers of the antero-lateral columns of that portion of the cord, which gave origin to the nerve fibers supplying the paralyzed extremities, to have undergone atrophy and degeneration. The impulses generated in the anterior horns and transmitted through the anterior spinal nerve are motor, vaso-motor and trophic, named, I believe, in the order of symptomatic expression in infantile spinal paralysis.

I speak from the standpoint of clinical observation. The first

definite diagnostic symptom is motor paralysis. It is true that this is a flaccid paralysis, but atrophy does not appear for some time; never earlier than three or four weeks after the onset of the disease. Necrosis of tissue occurs much earlier in some cases, due to failure of vaso-motor function, whereby cell nutrition is hindered or cut off. Swelling, from the hyperemia which is natural to the presence of a toxin, doubtless has a part in the hindrance of capillary circulation, but certainly not all in the active necrosis occasionally seen in these cases. In my observation, small reference has been made to this phase of the disorder, so I have concluded that its occurrence is rare. In consideration of the part involved and its physiological functions, it seems remarkable that this is so.

There is some proof that vaso-motor fibers are found in posterior as well as anterior spinal nerve roots, but the fact that they are principally found in the anterior division indicates that interference with the function of the anterior part of the spinal arc is reasonably followed by less of this function.

Vaso-motor nerves of the leg, according to Starr, can be traced into the second and third lumbar ganglia and lumbar sympathetic cord and are derived from the five lower dorsal and first lumbar nerves. He also asserts that in order to obtain normal vascular tone, the local ganglia must not only be intact and in connection with the sympathetic ganglia, but must be connected with the spinal cord, which must be normal and capable of conduction. Injury to these parts either by traumatism or infection will produce a vascular dilatation by interfering with the transmission of vaso-constrictor impulses from within, outward.

Thus we see that this whole complicated mechanism depends for its physiological operation upon the normal functioning of the anterior horn of gray matter of the cord, the principal seat of disorder in infantile spinal paralysis.

Last year we had in Kansas, in various counties, cases of this disease occurring so simultaneously as to constitute what was termed an epidemic. One case in Wabaunsee county, which I saw at the request of the secretary of our State Board of Health, Dr. S. J. Crumbine, presented the following clinical picture to me, so unique that I venture to report it.

August 12, 1910, I saw M. M. Act, two and one-half years. On July 4 the child had a vomiting spell, with unusual restlessness. She ate poorly and did not seem well till August 7, when a second attack of vomiting occurred, followed in six hours by flaccid paralysis of the left leg and left foot. Temperature at the highest point

was 103. Examination showed paralysis of right forearm, left leg and left foot. *The left foot and ankle were cyanosed and the toes necrotic.* The child was dull, bowels distended with gas, and motion of the paralyzed parts caused pain. The pulse was 120 and respiration was of asthmatic character. The child died the following day, evidently of bulbar involvement.

Treatment of Tetanus with Large Doses Tetanus Antitoxin.

The Department has been furnishing tetanus antitoxin free to the people of this state suffering from tetanus, the only condition being that a complete report of the case be submitted by the attending physician to this Department. The following report is of interest because of the large doses and total amount of antitoxin administered, and of the toleration of enormous doses of chloral and morphine. It has been demonstrated in other cases that only large doses of antitoxin seems to be effective, as was clearly shown in this case. The report follows:

TOPEKA, KAN., March 11, 1912.

Dr. S. J. Crumbine, State Board of Health, City:

DEAR DOCTOR—In compliance with our agreement I herewith respectfully submit the following report of the case of tetanus:

History. Patient, Mr. S. T. Fisher; residence, Eskridge, Kan. Occupation, farmer; married; nationality, German; age, 39.

On January 14, 1912, Mr. Fisher was out hunting rabbits, and was in the act of picking up a rabbit which he had shot, and his gun was accidentally discharged.

Was admitted into Stormont hospital late that night, and upon examination it was found that the charge of the gun had scraped his right side axillary line and the full charge penetrated the axillary space. After consultation it was deemed advisable, on account of the nerve and blood supply not being injured, to try to save his arm. Mr. Fisher apparently did well until the morning of January 26, when he began to show first symptoms of tetanus. Manifested first by severe pain in his shoulder, back and jaw. Pulse, 100; temperature, 101; respiration, 18; 25,000 units of the anti-tetanic serum was immediately administered. He had a very comfortable night, but still complained of pain in his shoulder.

January 27. Pulse 98, temperature 99, respiration 22. He was perspiring freely after the wound was dressed; was again given 15,000 units; in the evening 10,000 more units were given. Considerable twitching was manifested, and during the day was given one grain of morphine, 50 grains of chloral hydrate.

In the evening of the above date, at 8:30 P. M., pulse 118; on account of being unable to take temperature by mouth, rectal temperature 103.4; respiration 22.

January 28, 12:30 A. M. Pulse 120, rectal temperature 102, respiration

21; this was the highest temperature recorded during a day; 15,000 more units were given at 10 A. M., followed with 10,000 more units, 5:30 P. M. During this day was given one grain of morphine hypodermatically, together with 50 grains of the chloral.

January 29. Chart showed that he rested very little during the night; and at 5:30 A. M., pulse 98, rectal temperature 99.4, respiration 18; 10 A. M., 7500 units were given, and at 4:15 P. M., 4500 units; 3:20 P. M., record shows pulse 102, temperature 100, respiration 20; 75 grains of chloral hydrate, one grain of morphine.

January 30, 6 A. M. Chart shows that Fisher slept very little, temperature 99.6, pulse 100, respiration 18; that was the highest recorded during the day. He received 13,000 units, together with chloral hydrate 45 grains, one grain of morphine.

January 31, 4:30 A. M. Pulse 102, temperature 100.8, respiration 19; slept very little and was very restless during the night. No serum was administered during the day, receiving one and one-half grains of morphine together with 75 grains of chloral.

February 1, noon. Ten thousand more units of serum was administered together with one grain of morphine, 60 grains of chloral. The highest temperature recorded was 102.2.

February 2. Highest temperature 100.8; had a fairly good night, and at 9 A. M. 10,000 more units injected, this being the last of the serum treatment.

Comment. From this time on the patient made a rapid recovery from the tetanic infection, which was undoubtedly due to the large dosage of the serum, totaling 115,000 units.

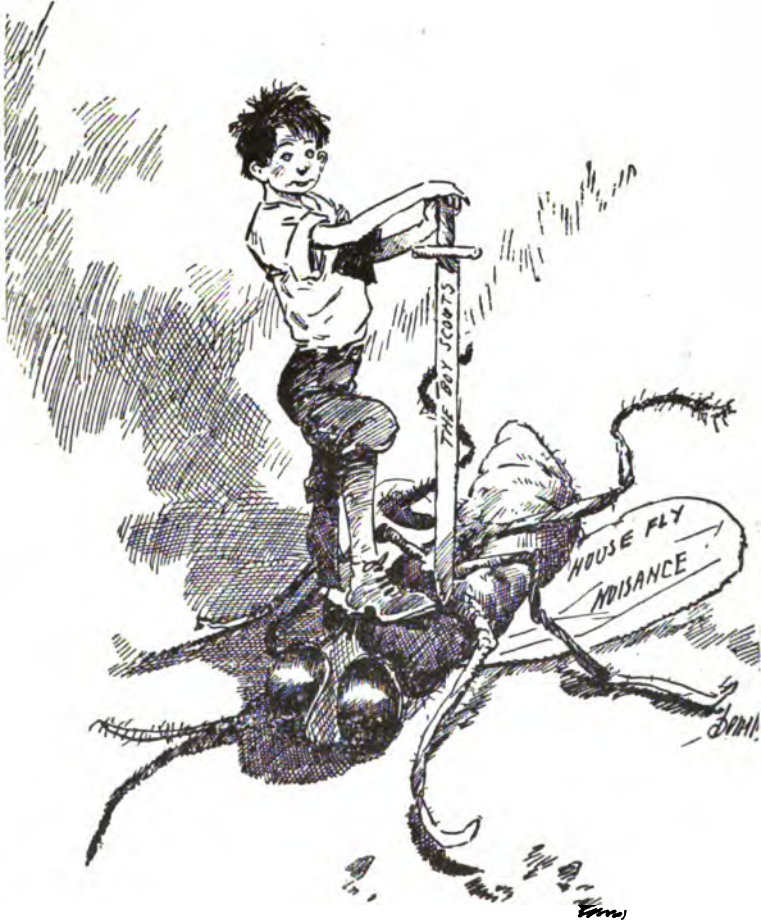
While Mr. Fisher had no heavy convulsion the severe pain, which undoubtedly was due to some extent to the shattering of the humerus, the twitching, the setting of the jaw, the tetanic smile, were characteristic.

In conclusion, state that the gunshot wound was received was treated openly, counter-drainage made over the outer aspect of shoulder, and the full charge, including wadding, clothing, shot and loose pieces of bone, were removed, drainage tubes inserted through and through, while the discharge was purulent and profuse. And there is considerable dead bone to be removed yet. We expect to make him a useful arm by the resection of the head of the humerus as the X-ray shows it to be dead.

Yours truly,

H. B. HOGEBOOM,
Per L. H. MUNN.

The sociological and industrial study of the incidence of tuberculosis in our ten cities of the first class, reveals a condition that is positively appalling.



**The Most Potential Anti-Fly Organization
in America.**

BULLETIN

OF THE

Kansas State Board of Health.

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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DEACON, Registrar.

No. 6.

JUNE, 1912.

VOL. VIII.

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Don't fret—you'll feel cooler!

Look well to the cistern to see that it is mosquito proof.

Success is not far from any man who really does the best he can.

The habit of getting into a habit seems to be chronic with a lot of people.

Have you had the anti-typhoid vaccination before leaving for your summer vacation?

Fidelity is the condition of success and is written in the constitution of the universe.—*Estey.*

Look out for adulterated linseed oil. The May BULLETIN will give you information on the subject.

Many women, after remedying a smoking lamp or a smoking stove, has to put up with a smoking husband.

One million dollars is annually lost in Kansas by not gathering the eggs daily and marketing them frequently.

VITAL STATISTICS

Reported to the Kansas Board of Health for May, 1912.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.		April.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Births...	Deaths.
The State... totals.	23	1	30	2	30	0	24	0	663	4	2,725	1,531
May, 1911.....	25	1	31	5	190	2	220	3	693	4		
Allen	0	0	2	0	0	0	1	0	22	0	40	24
Anderson	0	0	0	0	1	0	0	0	0	0	25	8
Atchison	0	0	0	0	0	0	0	0	0	0	12	5
Barber	0	0	0	0	0	0	0	0	0	0	14	7
Barton	0	0	1	0	0	0	0	0	0	0	37	14
Bourbour	0	0	0	0	3	0	0	0	7	0	19	5
Brown	0	0	0	0	2	0	0	0	2	0	46	13
Butler	1	0	0	0	0	0	0	0	0	0	30	10
Chase	0	0	0	0	0	0	6	0	0	0	17	7
Chautauqua.....	0	0	0	0	0	0	1	0	4	0	32	13
Cherokee.....	0	0	0	0	2	0	0	0	15	0	32	48
Cheyenne.....	0	0	0	0	0	0	0	0	0	0	7	2
Clark	0	0	0	0	0	0	0	0	0	0	8	3
Clay	0	0	0	0	5	0	0	0	0	0	23	14
Cloud	0	0	0	0	0	0	0	0	0	0	33	7
Coffey	0	0	0	0	0	0	0	0	0	0	7	15
Comanche	0	0	0	0	0	0	0	0	0	0	14	1
Cowley	1	0	0	0	1	0	1	0	0	0	35	40
Crawford	1	0	1	0	0	0	0	0	15	0	65	34
Decatur.....	0	0	0	0	0	0	0	0	0	0	6	3
Dickinson.....	0	0	0	0	0	0	0	0	0	0	42	24
Doniphan.....	0	0	0	0	0	0	0	0	0	0	31	12
Douglas.....	0	0	0	0	0	0	0	0	0	0	15	15
Edwards.....	0	0	0	0	3	0	0	0	0	0	12	3
Elk	1	0	0	0	0	0	0	0	0	0	20	8
Ellis	0	0	0	0	0	0	0	0	0	0	32	8
Ellsworth.....	0	0	4	1	0	0	0	0	0	0	25	0
Finney.....	0	0	0	0	0	0	2	0	0	0	11	5
Ford	0	0	0	0	5	0	0	0	0	0	46	11
Franklin.....	0	0	1	0	0	0	0	0	0	0	27	24
Geary.....	0	0	0	0	0	0	0	0	0	0	25	8
Gove.....	0	0	0	0	0	0	0	0	0	0	12	2
Graham.....	0	0	0	0	0	0	0	0	0	0	12	5
Grant.....	0	0	0	0	0	0	0	0	0	0	0	1
Gray.....	0	0	0	0	0	0	0	6	0	0	3	2
Greenley.....	0	0	0	0	0	0	0	0	0	0	3	0
Greenwood.....	2	0	0	0	0	0	0	0	0	0	49	10
Hamilton.....	0	0	0	0	1	0	0	0	0	0	8	0
Harper.....	0	0	0	0	0	0	0	0	0	0	29	12
Harvey.....	0	0	0	0	0	0	0	0	0	0	47	16
Haskell.....	0	0	0	0	0	0	0	0	0	0	1	0
Hodgeman.....	0	0	0	0	0	0	0	0	0	0	12	12
Jackson.....	0	0	1	0	1	0	0	0	0	0	33	1
Jefferson.....	0	0	0	0	1	0	0	0	0	0	32	16
Jewell.....	0	0	0	0	0	0	1	0	0	0	23	19
Johnson.....	0	0	0	0	1	0	0	0	0	0	32	20
Kearny.....	0	0	0	0	0	0	0	0	0	0	4	3
Kingman.....	0	0	0	0	0	0	0	0	0	0	14	6
Kiowa.....	0	0	0	0	0	0	0	0	0	0	5	2
Labette.....	4	0	0	0	0	0	0	16	0	0	30	17
Lane.....	0	0	0	0	0	0	0	0	0	0	1	0
Leavenworth.....	0	0	1	0	0	0	0	0	0	0	14	14
Lincoln.....	0	0	0	0	0	0	0	0	0	0	21	0
Linn.....	0	0	0	0	0	0	0	0	0	0	18	8
Logan.....	0	0	0	0	0	0	0	0	0	0	3	3
Lyon.....	0	0	2	0	2	0	6	0	4	0	34	30
Marion.....	2	0	0	0	0	0	0	0	0	0	44	22
Marshall.....	0	0	0	0	0	0	0	0	0	0	27	19
McPherson.....	3	0	0	0	0	0	0	0	0	0	46	16
Meade.....	0	0	0	0	0	0	0	2	0	0	5	3

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.		April.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Births..	Deaths..
Miami.....	0	0	0	0	1	0	0	0	1	0	16	27
Mitchell.....	0	0	0	0	0	0	0	0	0	0	35	12
Montgomery.....	0	0	0	0	0	0	1	0	13	0	31	24
Morris.....	1	0	2	0	5	0	0	0	0	0	19	8
Morton.....	0	0	0	0	0	0	0	0	0	0	0	0
Nemaha.....	0	0	0	0	1	0	0	0	0	0	15	12
Neosho.....	0	0	0	0	4	0	0	0	19	0	39	23
Ness.....	0	0	0	0	0	0	0	0	0	0	16	3
Norton.....	0	0	0	0	0	0	0	0	0	0	22	8
Osage.....	0	0	0	0	0	0	0	0	1	0	30	18
Osborne.....	0	0	0	0	0	0	0	0	0	0	29	14
Ottawa.....	0	0	0	0	4	0	0	0	29	0	28	7
Pawnee.....	0	0	0	0	0	0	0	0	0	0	25	10
Phillips.....	0	0	0	0	0	0	0	0	0	0	10	9
Pottawatomie.....	0	0	0	0	0	0	0	0	0	0	42	14
*Pratt.....	0	0	0	0	0	0	0	0	0	0	19	7
*Rawlins.....	0	0	0	0	0	0	0	0	0	0	7	4
*Reno.....	0	0	0	0	0	0	0	0	0	0	35	7
Republic.....	1	0	0	0	2	0	0	0	0	0	28	11
Rice.....	0	0	0	0	0	0	0	0	0	0	27	14
Riley.....	0	0	0	0	1	0	0	0	0	0	18	15
Rooks.....	0	0	0	0	0	0	0	0	0	0	20	9
Rush.....	0	0	0	0	0	0	0	0	0	0	23	7
*Russell.....	0	0	0	0	2	0	0	0	3	0	16	8
Saline.....	0	0	0	0	0	0	0	0	0	0	30	19
Scott.....	0	0	0	0	0	0	0	0	0	0	3	4
Sedgwick.....	0	0	0	0	0	0	0	0	0	0	26	6
Seward.....	0	0	0	0	0	0	0	0	0	0	8	2
Shawnee.....	0	0	0	0	1	0	1	0	0	0	12	11
Sheridan.....	0	0	0	0	0	0	0	0	0	0	15	8
Sherman.....	0	0	0	0	0	0	0	0	0	0	5	3
Smith.....	0	0	1	1	0	0	0	0	0	0	33	6
*Stafford.....	0	0	0	0	0	0	0	0	0	0	12	6
*Stanton.....	0	0	0	0	0	0	0	0	0	0	0	1
Stevens.....	0	0	0	0	0	0	0	0	0	0	2	3
Sumner.....	0	0	0	0	1	0	0	0	6	0	37	16
*Thomas.....	0	0	0	0	0	0	0	0	0	0	9	2
Trego.....	0	0	0	0	0	0	0	0	0	0	8	0
Wabaunsee.....	0	0	0	0	0	0	0	0	0	0	21	12
Wallace.....	0	0	0	0	0	0	0	0	0	0	3	0
Washington.....	0	0	0	0	1	0	0	0	0	0	46	7
Wichita.....	0	0	0	0	0	0	0	0	1	0	4	0
Wilson.....	0	0	0	0	1	0	0	0	301	0	22	20
*Woodson.....	0	0	0	0	0	0	0	0	8	0	10	6
*Wyandotte.....	0	0	0	0	0	0	0	0	0	0	16	25
Cities:												
Atchison.....	0	0	0	0	0	0	0	0	0	0	11	27
Coffeyville.....	2	0	0	0	0	0	0	0	0	0	13	11
Fort Scott.....	0	0	0	0	15	0	0	0	55	4	13	9
Hutchinson.....	1	1	0	0	0	0	0	0	0	0	21	17
Independence.....	0	0	0	0	0	0	0	0	0	0	14	12
Kansas City.....	3	0	3	0	5	0	3	0	17	0	144	157
Lawrence.....	0	0	5	0	2	0	1	0	1	0	13	8
Leavenworth.....	0	0	0	0	11	0	0	0	85	0	34	25
Parsons.....	0	0	2	0	1	0	0	0	16	0	18	23
Pittsburg.....	0	0	4	0	4	0	0	0	13	0	23	31
Topeka.....	0	0	0	0	0	0	0	0	0	0	61	67
Wichita.....	0	0	0	0	0	0	0	0	1	0	80	50

* No report from county health officers.
 † Births and deaths reported with cities of first class. Reports from cities over 10,000 population not included in county returns.

“I don't think much of Fletcher,”
 Remarked the mooley cow.
 “I know he claims the credit,
 But 'twas I who showed him how.”

—Lippincott's.

DEATHS AND BIRTHS IN KANSAS, Month of April, 1912.

DEATHS.

Stillbirths not included.			
Typhoid fever.....	15	Diseases of liver and adnexa.....	33
Smallpox.....	0	Peritonitis.....	4
Measles.....	22	Other diseases digestive system.....	33
Scarlet fever.....	6	Acute nephritis.....	14
Whooping cough.....	18	Bright's disease.....	86
Diphtheria.....	12	Other diseases genito-urinary system.....	14
Dysentery.....	0	The puerperal state.....	16
Tuberculosis, all forms.....	121	Diseases of the skin, etc.....	6
Cancer, all forms.....	107	Diseases of the bones, etc.....	3
Rheumatism, all forms.....	14	Malformations.....	25
Diabetes.....	21	Diseases of early infancy.....	84
Other general diseases.....	57	Old age.....	78
Meningitis.....	65	Suicides.....	21
Cerebral hemorrhage.....	94	Accidents.....	7
Paralysis.....	30	Homicides.....	81
Other diseases nervous system.....	48	Ill-defined diseases.....	26
Organic heart disease.....	103	Total deaths.....	1,586
Other diseases circulatory system.....	66	Less delayed reports.....	55
Broncho-pneumonia.....	59	Net for April.....	1,531
Pneumonia.....	39	BIRTHS.	
Other diseases respiratory system.....	50	Males.....	1,461
Diarrhea and enteritis (under 2 years).....	38	Females.....	1,359
Diarrhea and enteritis (2 years and over),	10	White, 2,708. Colored, 57.	
Appendicitis.....	10	Total births, 2,760.	
		Stillbirths, 86.	

AGES AT DATE OF DEATH.

Ages.	No.	SEX.	
-1.....	230	Males.....	837
1-2.....	76	Females.....	749
3-5.....	27	COLOR.	
6-10.....	26	White.....	1,458
11-15.....	32	Chinese.....	0
16-20.....	45	Indian.....	1
21-25.....	65	Black.....	127
26-30.....	57	NATIONALITY.	
31-35.....	68	Native.....	1,344
36-40.....	66	Foreign.....	204
41-45.....	60	Unknown.....	38
46-50.....	65	SOCIAL CONDITION.	
51-60.....	165	Single.....	566
61-70.....	221	Married.....	660
71-80.....	249	Widowed.....	329
81-90.....	113	Divorced.....	18
91-100.....	20	Unknown.....	18
100-+.....	3		
Unknown.....	3		
Total.....	1,586		

The Moral of the Topeka Epidemic of Smallpox.

In July, 1911, there came to the east side of Topeka, known as Parkdale, a very mild case of what later on was proven to be smallpox, but which at the time was diagnosed by the attending physician as a case of chickenpox. No precaution was taken by any quarantine measures, and as a result a large number of exposures were made which later resulted in an epidemic of smallpox of unusual severity and heavy mortality. The disease very early assumed a malignant type—the hemorrhagic form—and while a special physician was employed by the city to treat and care for these cases, yet when smallpox assumes this type medical treatment offers little encouragement.

The total number of cases reported was 143; of these there were 23 deaths, making a mortality of 16 per cent, all resulting from an unrecognized, very mild type of the disease.

The study of the influence of vaccination in this epidemic is very striking, and ought to convince the most skeptical of the value and importance of vaccination as immunizing against smallpox. Complete records of ninety-four cases were secured by the physician specially employed by the city, and out of that number ten have a history of having been previously vaccinated, but in every instance so long ago as to have entirely outgrown the immunity. The most recent vaccination of the ten was No. 14, which was sixteen years ago; No. 25, twenty years ago; No. 80, thirty years ago; Nos. 74 and 75, thirty-five years ago; Nos. 54 and 70, forty years ago; Nos. 58, 79 and 92, forty-five years ago. All of these had very mild types of the disease; so it can be fairly assumed that even at those late periods the disease was influenced favorably by reason of its mildness. It should be noted, therefore, that no one who had been successfully vaccinated within sixteen years contracted the disease.

Of the twenty-three fatal cases not one had ever been successfully vaccinated. No. 86, who died, was said to have been vaccinated internally by taking some kind of powders, and we pause to remark that this case very clearly indicates the futility as well as the absurdity of that sort of vaccination. Neither science nor the courts (see Supreme Court Report of Pennsylvania) recognize any kind of effective vaccination against smallpox except the inoculation of the cow-pox vaccine into some portion of the skin of the body.

In the large number of homes that were infected, time and time

again it was demonstrated that only those members of the family (oftentimes but one) who escaped the disease were those who had been successfully vaccinated. In one single instance the disease developed in a case that had a history of having had smallpox nine years ago. The first attack, if the patient ever had real smallpox, must have been of the mild type that has been prevalent throughout the country for the past fifteen years, and which gives but a relative immunity against smallpox. The writer has personal knowledge of a second attack of the disease following a mild type in the first place in a number of cases within a period of from two to four years, that have occurred throughout the state during the past eight years. Thus not only does past experience, but the record of this epidemic, seem to indicate that a successful vaccination will give immunity against smallpox for a longer period of time than a mild attack of the disease.

Another observation of interest in this epidemic is that it seems to be well proven that a cat seemed to be the means of communicating the disease in at least one instance to a child of the family, the balance of the family in turn becoming inoculated from the child. The cat in question divided part of its time between two families whose properties adjoined, the alley only separating them. After the smallpox had broken out in one of these families the quarantine officer gave instructions that no cats or dogs be permitted to remain in the house; this cat was driven out and immediately went to its other home, was taken up and fondled by a little girl, who, at the expiration of the usual time of incubation, took down with smallpox, and in turn infected the entire family.

In several instances people declared they were not afraid of the disease, because, they said, "people catch the disease through fear," and they refused to be vaccinated because, they said, they were not afraid. Others said they would "rather have the disease than be vaccinated." In all these instances which occurred in infected homes they promptly took down with the disease, regardless of their lack of fear, and, oh the pity of it! one of these people died. A disease that owes its origin to a microorganism is not escaped by lack of fear, neither is it propagated by cause of fear, and when people really get that scientific truth firmly ground into their grey matter many cases of sickness and even death may be avoided.

The moral from this epidemic seems to be well written in the body of the tabulation, namely, that only the unvaccinated died from smallpox; that a recent successful vaccination gives absolute immunity from smallpox, and that lack of fear of the disease, or

the fear of catching the disease, plays no part in the dissemination of this or any other infectious disease.

The following table is self-explanatory, and is herewith given for those who have eyes to see that they may see:

SMALLPOX PATIENTS QUARANTINED AND TREATED IN TOPEKA.

From July 19, 1911, to January 1, 1912. Report by O. P. MARCOTTE, special city physician.

No. of case.	RECOVERED.		DIED.		If had smallpox before, when.	Type of disease.
	If successfully vaccinated, when.	Unvaccinated.	Successfully vaccinated.	Unvaccinated.		
1	No.	Yes.	.....	.....	No.	Discrete.
2	No.	Yes.	.....	.....	No.	Discrete.
3	No.	Yes.	.....	.....	No.	Discrete.
4	No.	Yes.	.....	.....	No.	Discrete.
5	No.	Yes.	.....	.....	No.	Discrete.
6	No.	Yes.	.....	.....	No.	Discrete.
7	No.	Yes.	.....	.....	No.	Discrete.
8	No.	Yes.	.....	.....	No.	Discrete.
9	No.	Yes.	.....	.....	No.	Discrete.
10	No.	Yes.	.....	.....	No.	Discrete.
11	No.	Yes.	.....	.....	No.	Discrete.
12	No.	Yes.	.....	.....	No.	Discrete.
13	No.	Yes.	.....	.....	No.	Discrete.
14	16 yrs. ago.	No.	.....	.....	No.	Varioloid.
15	.....	.....	.....	Yes.	No.	Hemorrhagic.
16	No.	Yes.	.....	.....	No.	Discrete.
17	No.	Yes.	.....	.....	9 yrs. ago.	Discrete.
18	No.	Yes.	.....	.....	No.	Discrete.
19	.....	.....	.....	Yes.	No.	Hemorrhagic.
20	.....	.....	.....	Yes.	No.	Discrete.
21	No.	Yes.	.....	.....	No.	Discrete.
22	No.	Yes.	.....	.....	No.	Discrete.
23	No.	Yes.	.....	.....	No.	Discrete.
24	No.	Yes.	.....	.....	No.	Discrete.
25	20 yrs. ago.	No.	.....	.....	No.	Varioloid.
26	No.	Yes.	.....	.....	No.	Discrete.
27	No.	Yes.	.....	.....	No.	Discrete.
28	No.	Yes.	.....	.....	No.	Discrete.
29	No.	Yes.	.....	.....	No.	Discrete.
30	No.	Yes.	.....	.....	No.	Discrete.
31	No.	Yes.	.....	.....	No.	Discrete.
32	.....	.....	.....	Yes.	No.	Confluent.
33	No.	Yes.	.....	.....	No.	Discrete.
34	.....	.....	.....	Yes.	No.	Hemorrhagic.
35	No.	Yes.	.....	.....	No.	Discrete.
36	No.	Yes.	.....	.....	No.	Discrete.
37	No.	Yes.	.....	.....	No.	Discrete.
38	No.	Yes.	.....	.....	No.	Discrete.
39	No.	Yes.	.....	.....	No.	Discrete.
40	No.	Yes.	.....	.....	No.	Discrete.
41	No.	Yes.	.....	.....	No.	Hemorrhagic.
42	No.	Yes.	.....	.....	No.	Discrete.
43	No.	Yes.	.....	.....	No.	Discrete.
44	No.	Yes.	.....	.....	No.	Discrete.
45	No.	Yes.	.....	.....	No.	Discrete.
46	.....	.....	.....	Yes.	No.	Hemorrhagic.
47	No.	Yes.	.....	.....	No.	Discrete.
48	No.	Yes.	.....	.....	No.	Discrete.
49	No.	Yes.	.....	.....	No.	Discrete.
50	No.	Yes.	.....	.....	No.	Discrete.
51	No.	Yes.	.....	.....	No.	Discrete.
52	No.	Yes.	.....	.....	No.	Confluent.
53	.....	.....	.....	Yes.	No.	Confluent.
54	40 yrs. ago.	No.	.....	.....	No.	Discrete.
55	No.	Yes.	.....	.....	No.	Discrete.
56	.....	.....	.....	Yes.	No.	Confluent.
57	No.	Yes.	.....	.....	No.	Discrete.
58	45 yrs. ago.	No.	.....	.....	No.	Discrete.
59	.....	.....	.....	Yes.	No.	Hemorrhagic.
60	No.	Yes.	.....	.....	No.	Discrete.
61	No.	Yes.	.....	.....	No.	Discrete.
62	No.	Yes.	.....	.....	No.	Discrete.
63	No.	Yes.	.....	.....	No.	Discrete.
64	.....	.....	.....	Yes.	No.	Hemorrhagic.
65	No.	Yes.	.....	.....	No.	Discrete.

SMALLPOX PATIENTS QUARANTINED AND TREATED IN TOPEKA—CONCLUDED.

No. of case.	RECOVERED.		DIED.		If had smallpox before, when.	Type of disease.
	If successfully vaccinated, when.	Unvaccinated.	Successfully vaccinated.	Unvaccinated.		
66	.....	.....	.....	Yes.	No.	Confluent.
67	No.	Yes.	.....	.....	No.	Discrete.
68	No.	Yes.	.....	.....	No.	Discrete.
69	No.	Yes.	.....	.....	No.	Discrete.
70	40 yrs. ago.	No.	.....	.....	No.	Discrete.
71	No.	Yes.	.....	.....	No.	Discrete.
72	.....	.....	In infancy; not visible.	Doubtful; no scars.	No.	Hemorrhagic.
73	No.	Yes.	.....	.....	No.	Discrete.
74	25 yrs. ago.	No.	.....	.....	No.	Varioloid.
75	35 yrs. ago.	No.	.....	.....	No.	Varioloid.
76	No.	Yes.	.....	.....	No.	Discrete.
77	No.	Yes.	.....	.....	No.	Discrete.
78	.....	.....	.....	Yes.	No.	Hemorrhagic.
79	45 yrs. ago.	No.	.....	.....	No.	Discrete.
80	30 yrs. ago.	No.	.....	.....	No.	Discrete.
81	No.	Yes.	.....	.....	No.	Discrete.
82	No.	Yes.	.....	.....	No.	Confluent.
83	No.	Yes.	.....	.....	No.	Discrete.
84	No.	Yes.	.....	.....	No.	Discrete.
85	No.	Yes.	.....	.....	No.	Discrete.
†86	.....	.....	Inward vaccination.	Yes.	No.	Confluent.
87	No.	Yes.	.....	.....	No.	Discrete.
88	No.	Yes.	.....	.....	No.	Discrete.
89	No.	Yes.	.....	.....	No.	Discrete.
90	No.	Yes.	.....	.....	No.	Discrete.
91	No.	Yes.	.....	.....	No.	Discrete.
92	45 yrs. ago.	No.	.....	.....	No.	Discrete.
93	No.	Yes.	.....	.....	No.	Discrete.
94	No.	Yes.	.....	.....	No.	Discrete.

Cases with complications as indicated by * :

- 19. Pregnancy and abortion—6 months.
- 20. Supposedly dropsical complications.
- 41. Supposedly albuminuria complications.
- 43. Pregnancy—4 months.
- 56. Syphilis (tertiary).
- 61. Granular conjunctivitis.
- 78. Pregnancy and abortion—2 months.
- 82. Supposedly dropsical.

† So-called "inward" vaccination with powders.

P. 2.—Other deaths occurred before special physician was secured, and no history was secured other than history of no vaccination.

Patent Medicines or Nostrums.

By L. E. SAYRE, Director of Drug Analysis, Kansas State Board of Health.

It is a well-known physiological phenomenon among medical students that, during the course of their medical study of diseases and their symptoms, they are usually affected with the belief that they are themselves afflicted with the particular disease under consideration. For example, if they are studying the heart, they will have an unusual pounding of the cardiac muscle, leading to the belief that some heart lesion is present. If they are studying the liver they discover some hepatic disturbance leading to a jaundiced condition. If it be the lungs, then immediately the attention is called to the respiratory organs and the air passages, when a depressed or abnormal condition of those organs is suspected.

Those who have read Jerome K. Jerome's story, entitled "Three

Men in a Boat," will recall that in the first chapter the writer confesses that through the study of medicine, especially that of diseases and their symptoms, he contracted in due and rapid succession "all the diseases known to medical science with the exception of housemaid's knee."

The same principle of psychological influence is illustrated in the reading of the newspaper advertisements of patent medicines. The adroit and skillful manipulator of words in ordinary advertising practice can make a man believe that he has every disease there presented, and, in addition, that the nostrum advertiser can supply the exact specific for these diseases. Our actions are so much more influenced by suggestions than by reason that these artistic manipulators of the advertising art can play their seductive tricks with the skill of one who is master of the keyboard.

Since the enactment of the Food and Drugs Law and the administration of this law in the various states, the patent medicine and nostrum business has become a subject of scrutiny on the part of scientific men and those who are interested in public welfare. Those who are studying the question carefully are surprised at the extravagant claims made on the labels and wrappers of these nostrums and the almost total lack of merit of the preparations thus advertised. Such medicinal preparations have been exploited in Kansas. One of these has been advertised to cure about thirty different diseases, from consumption to Bright's disease, by dropping the medicinal liquid into the eye. This liquid, when analyzed at the University drug laboratory, was found to consist of a watery solution of salt and sugar. The foxy proprietor of this preparation knew that the dear public would, by suggestion, be influenced to have the various diseases enumerated and be led to believe the brazen statements made, that this alleged remedy (salt and sugar) was the one reliable remedy for the long list of diseases enumerated.

Another one of the so-called patent medicines calculated to allure public patronage is known as Fruitola and Traxo. This compound is alleged to be a "system cleanser, to remove gall stones, and to positively cure all stomach trouble." On analysis, this alleged wonderful remedy is found to contain ordinary olive oil as the principal medicinal substance.

It is unnecessary to enumerate the results of analyses of scores of these nostrums in the drug laboratory of the University of Kansas. Suffice to say, they are composed of ordinary medicinal agents for which absurdly extravagant claims are made. Says Doctor

Simmons, of the American Medical Association: "The claims in the advertisements of 'patent medicines' have become so absurdly extravagant that these advertisements are synonymous with mendacity."

Judge McFarland, of Pennsylvania, when called upon for a legal decision regarding a case involving the merits of a certain class of patent medicines, said, in substance: "They are methods of prescribing for diseases at long range." Any intelligent, thoughtful person knows that many of the symptoms listed in patent medicine advertisements are caused by many disorders other than the diseases cited. For one to diagnose his own case is the height of folly; yet these advertisers advise the poor, deluded victim to pass upon subjects often baffling the highest medical skill. The enormous business done by the proprietors of medicine and the serious menace which it is to the health and lives of the public requires us to scrutinize carefully the ground upon which these nostrums stand. And it is shown that they belong to the reprehensible class.

The history of the patent medicine and nostrum business will show that originally they claimed to be inventions or discoveries in therapeutics. In process of time these so-called discoveries were found to be compounds of well-known simple remedies. One who can put together rhubarb and senna, or calomel and jalap, is certainly no discoverer, but merely a mixer of well-known remedial agents. It is true if these were mixed without ordinary professional skill they might be a mere jumble of things, but the mixing of them with proper skill can not claim for them an invention worthy of protection as a patent.

WHAT SHALL WE HAVE TO TAKE THE PLACE OF PATENT MEDICINES?

For minor ailments every home should be provided with well-known household remedies. With these it should be the duty of the family provider to become not only well acquainted, but with some careful attention to become intelligent in their use. This should be the duty of the mother, who is naturally, from her position, the nurse of the family. These household remedies should contain ingredients about which there should be no suggestion of secrecy, nor be even seemingly protected by a so-called misnamed "patent." They should be composed of well-recognized medicinal agents about which the physician or pharmacist should be willing and able to furnish reliable and trustworthy information without remuneration. This information should be given freely, as it is

common property, contributed by pharmacists and physicians and published in standard medical works.

If physicians, pharmacists and the public would combine and cooperate with each other along indicated lines it would not be long before the days of the nostrum fakers would be numbered.

The Effect of the Environment of Carbonated Beverages on Bacteria.¹

By C. C. YOUNG and N. P. SHERWOOD, Water Analysts, Kansas State Board of Health.

There is a tradition among bottlers of carbonated soft drinks, founded, as far as can be learned, on very little experimental data, that the conditions under which "soft" drinks are prepared are toxic to all bacteria.²

The basis of this idea appears to be statements in the literature which state that carbon dioxide under pressure markedly reduces the number of bacteria in water, and that *B. typhosus* and *B. coli* show a reduction of 90 per cent in twenty-four hours when exposed to carbon dioxide under pressure. However, the experiments that were available were not carried out under bottlers' conditions. The conception held by the majority of manufacturers is that so long as the water is clear and sufficiently soft to carbonate well, no thought need be given to its sanitary quality, as the carbon dioxide under pressure will kill any living organism.

It was the object of this investigation to find whether or not any pathogenic organism could withstand the unfavorable environment of the bottled carbonated beverages a sufficient length of time to reach the consumer.

Investigations of trade conditions showed that, with the possible exception of ginger ale, most of the "pops" put on the market are consumed within ten days from the time of bottling. In fact, during the summer months many instances were found where the goods go directly from under the bottling machine to the consumer.

The following experiments were carried out under trade conditions, with the one exception, however, that all conditions were intensified.

Pop bottles of 240 cc. capacity and ability to withstand twenty pounds pressure were used. All bottles except the ones to be in-

¹ Paper read before the Kansas City Section, Amer. Chem. Soc., March 25, 1911.

² Sulz, "A Treatise on Beverages," p. 67; Karl F. Kellerman, *Plant Bulletin*, 100, Part 8, page 7; "Sterilization of Water by Citric Acid," *Scientific American*, 98, 201, March 21, 1908.

oculated with *B. typhosus* were washed in the usual manner; the latter were washed, boiled for thirty minutes, and cooled. Several sets of bottles giving different conditions of environment were inoculated. Three sets, of eight bottles each, were inoculated from forty-eight-hour broth cultures of *B. typhosus*, *B. coli communis* and *B. prodigiosus*, respectively, each bottle receiving 1 cc. of its respective culture. Syrup known as bottlers' lemon had been previously added. Four bottles from each of the three sets were then filled, in the usual manner, with carbonated water at eighteen pounds pressure, at 10° C., and capped. The remaining four bottles in each of the three sets were filled, in the usual manner, with uncarbonated water and capped.

In the fourth and fifth sets no organism was used for inoculation, syrup was added to one but not to the other, and both were filled with carbonated water and capped. A sample of the water used in bottling was also taken. Samples from each set were plated out in the University laboratories 4, 28, 80 and 244 hours after the filling of the bottles. All bottles were kept at room temperatures, to correspond with normal conditions in trade. In plating, plain agar was used for *B. prodigiosus*, both plain and litmus-lactose agar for *B. coli*, and litmus-lactose agar for *B. typhosus*. Litmus-lactose agar was used to aid in identification of the last-named organisms. Plates of *B. prodigiosus* were incubated at room temperatures, and those *B. coli* and *B. typhosus* at 37½° C. *B. prodigiosus* was identified by its characteristic red pigment. Presumptive and confirmatory tests were used for *B. coli*. Agglutination in the hanging drop and the Widal reaction were used in identifying *B. typhosus*. The mean results obtained are tabulated below:

TABLE I.

Duration of exposure before examination.	CARBONATED WATER USED—				
	With syrup.				Without syrup.
	<i>B. typhosus.</i>	<i>B. coli.</i>	<i>B. prodigiosus.</i>	Not inoculated.	Not inoculated.
	No. per cc.	No. per cc.	No. per cc.	No. per cc.	No. per cc.
0 hours.....	200,000	960,000	850,000	800	20
4 hours.....	25,000	250,000	800,000	.....	.....
28 hours.....	9,000	20,000	250,000	.....	.....
80 hours.....	1,200	1,800	150,000	.....	.....
244 hours.....	110	900	5,000	150	0

TABLE II.

Duration of exposure before examination.	UNCARBONATED WATER USED--			
	With syrup.			Without syrup.
	<i>B.</i> <i>typhosus.</i>	<i>B. coli.</i>	<i>B.</i> <i>prodigiosus.</i>	Not inoculated.
	No. per cc.	No. per cc.	No. per cc.	No. per cc.
0 hours.....	200,000	950,000	850,000	20
4 hours.....	200,000	950,000	850,000	.....
28 hours.....	50,000	*	*	.....
80 hours.....	6,000	100,000	*	.....
244 hours.....	900	40,000	110,000	200

* Slipped.

From the above tables we may note the following facts and conclusions:

1. That the number of organisms outside of those introduced was extremely small.
2. That there was a decided reduction in number of the organisms introduced, owing to standing 244 hours uncarbonated.
3. That there was a very marked reduction in numbers of all three organisms introduced, and especially of *B. typhosus*, owing to conditions existing in the carbonated bottles.
4. That there was not a complete killing out of the organisms introduced, during the entire experiment.
5. That *B. prodigiosus* and *B. coli* seemed to be somewhat more hardy than *B. typhosus*.

Undoubtedly³ the longevity of *B. typhosus* depends in a great measure upon the virulence of the organism, and as the results above show that some of the organisms will live longer than the beverage is normally on the market, the manufacturer should not depend upon the percentage of reduction caused by the carbon dioxide and other substances used.

From the observation that the most hardy individuals can resist these adverse conditions for a considerable length of time, the logical conclusion is that no water should be used in the manufacture of a carbonated drink that is in the least suspicious, and if a doubtful water is the only source of supply, this should be subjected to treatment by some method of sterilization, with subsequent filtration through a trustworthy and efficient filter.

KANSAS UNIVERSITY AND STATE BOARD OF HEALTH WATER LABORATORIES.

³ Expert Testimony, Chicago Drainage Canal Case. Water-supply Paper No. 194; Whipple, Engineering Record, 1904, p. 746; Houston, Fourth Report Royal Commission, 3, 20-58 (1904).

The Summer School for Physicians and Health Officers.

The summer school for physicians and health officers held at the University at Lawrence, June 10th to 15th, was a success from every point of view. The character and quality of the lectures and laboratory work was up to advance notices, and it was the unanimous opinion of the physicians in attendance that the course was most helpful and instructive.

Exactly fifty physicians registered, and a large number of University students attending the summer session of the University were present at many of the lectures.

It is the purpose of the University and the State Board of Health to continue these annual summer schools and make them so interesting and valuable that it will be a distinct loss, as it was this year, for any physician or health officer to miss being present.

Certificates of attendance will later be issued to all physicians who attended the entire course.

Minimum Quarantine Limit For Scarlet Fever.

At the annual meeting of the Kansas State Board of Health held June 6 and 7, 1912, the following resolution was unanimously adopted:

Resolved, That in the interest of public health, all cases of scarlet fever, regardless of its mildness or severity, shall remain in absolute quarantine as provided by law until the case is entirely recovered and desquamation is completed, and in no case shall the time of such quarantine be less than (28) twenty-eight days, and (10) ten days additional thereafter of modified quarantine; that is, that the patient be not permitted to attend any public place of assemblage for (10) ten days after the absolute quarantine is ended, and all places and things shall have been properly disinfected.

Physicians and health officers will please take notice and be governed accordingly. S. J. CRUMBINE, M. D., *Secretary*.

The open window and the bathtub do more to uphold human life than the pill box and the scalpel.—*Healthologist*.

If the death rate among calves was only one-half of that which prevails amongst infants, farmers would go out of the cattle business.

Consumptives Need Not Be Stuffed.

Many traditions with regard to the feeding of tuberculosis patients and with regard to food in general are given severe blows in a series of articles published in the October number of the *Journal of Outdoor Life*, the official organ of the National Association for the Study and Prevention of Tuberculosis.

Dr. John R. Murlin, of New York, assistant professor of physiology at the Cornell University Medical College, holds, in an article entitled "The Dynamic Principles of Nutrition," that a consumptive will gain weight and do well on three pints of whole milk, eight ounces of cream, five ounces of milk sugar, six eggs and two slices of buttered toast, as a ration for each twenty-four hours. The entire diet, with the exception of the bread and butter, could be prepared in advance and served for a cost of about fifty cents for the day. Miss Cecilia Flick, of the Henry Phipps Institute of Philadelphia, also offers some sample diets which the ordinary family can prepare for even less than fifty cents a day.

Dr. David R. Lyman, of Wallingford, Conn., and Dr. Paul B. Johnson, of Washington, D. C., both agree that the ordinary person eats too much, and that the old notions about stuffing a tuberculosis patient at all times and seasons have been proven false. Dr. Lyman holds that eggs are not a necessary article of the consumptive's diet, and that a tuberculosis patient should eat anything that agrees with him that is nourishing. He thinks that a tuberculosis patient should eat only a little more than a person in ordinary good health.

Dr. Murlin compares the food we eat to the fuel used in furnishing steam and power for an engine. In selecting our food he says that we should eat enough to furnish energy for the day's work, but that much more than this is not needed. He holds that the appetite is not a necessity for good digestion. "There is no fallacy of nutrition," he says, "greater than that which supposes that a food can not be digested and utilized without appetite." Most of the food we eat, fully four-fifths, goes to supply energy for our every-day tasks, while less than one-fifth goes to supply building material.

The Point of View.

[The following letter would seem to indicate that the writer belonged to the Society of "Cheerful Optimists," and has learned the art of "making lemonade from lemons handed him"]:

"I wish to thank the Kansas health authorities for quarantining my family and me for six weeks recently because one of us had smallpox. During that time my wife caught up with her sewing; we had three square meals a day, as no one came in, and she was not permitted to leave; we enjoyed six weeks of good nights' sleep; and, best of all, a cousin and four children had arranged to visit us, saw the smallpox sign on the door, and left town so scared she will never come back again. So for these and other blessings we are very thankful for the quarantine."

